



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

ATTN: Chuck Schmaltz

**JTT #1-24**

**24-23s-12w Stafford,KS**

Start Date: 2014.06.28 @ 21:31:48

End Date: 2014.06.29 @ 05:31:18

Job Ticket #: 51995                      DST #: 1

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

Printed: 2014.07.08 @ 10:07:22



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water Ste. 300  
Wichita, KS 67202-1216  
ATTN: Chuck Schmaltz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 51995

**DST#: 1**

Test Start: 2014.06.28 @ 21:31:48

## GENERAL INFORMATION:

Formation: **LKC**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 23:41:03  
 Time Test Ended: 05:31:18  
 Interval: **3372.00 ft (KB) To 3442.00 ft (KB) (TVD)**  
 Total Depth: 3442.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Ryan Reynolds  
 Unit No: 68  
 Reference Elevations: 1857.00 ft (KB)  
 1846.00 ft (CF)  
 KB to GR/CF: 11.00 ft

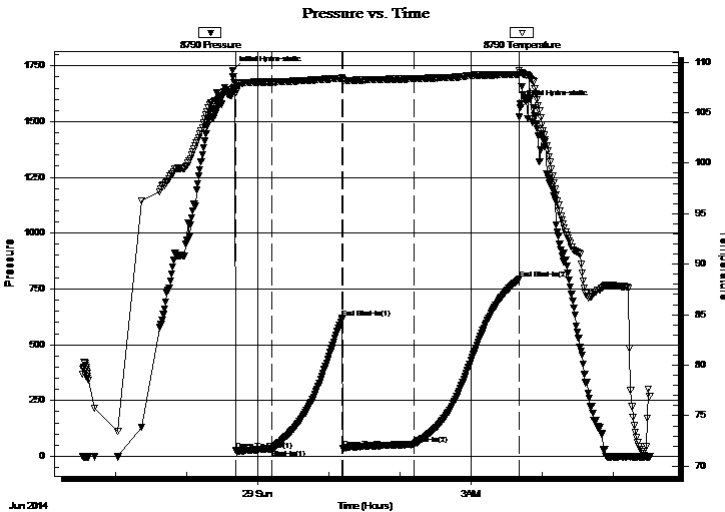
## Serial #: 8790

Inside

Press@RunDepth: 52.51 psig @ 3376.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.06.28 End Date: 2014.06.29 Last Calib.: 2014.06.29  
 Start Time: 21:31:53 End Time: 05:31:17 Time On Btm: 2014.06.28 @ 23:38:48  
 Time Off Btm: 2014.06.29 @ 03:41:33

TEST COMMENT: IF: Strong blow . BOB @ 12 min.  
 IS: No blow  
 FF: Weak blow . 2" - surf.  
 FS: No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1729.21	107.34	Initial Hydro-static
3	27.13	107.05	Open To Flow (1)
33	32.06	108.02	Shut-In(1)
93	619.10	108.41	End Shut-In(1)
93	37.00	108.18	Open To Flow (2)
153	52.51	108.36	Shut-In(2)
242	794.67	108.76	End Shut-In(2)
243	1577.79	108.97	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
80.00	OGCM 2%o, 13%g, 85%m	0.39
0.00	310' GIP	0.00

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)



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# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water Ste. 300  
Wichita, KS 67202-1216  
ATTN: Chuck Schmaltz

**24-23s-12w Stafford,KS**  
**JTT #1-24**  
Job Ticket: 51995      **DST#: 1**  
Test Start: 2014.06.28 @ 21:31:48

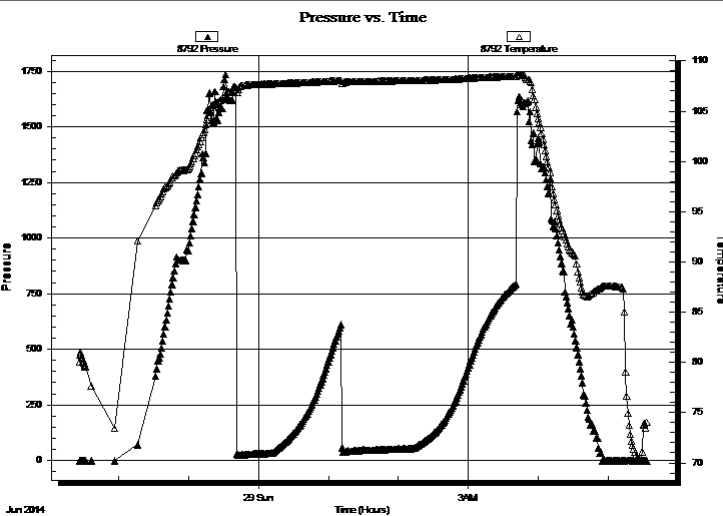
**GENERAL INFORMATION:**

Formation: **LKC**  
Deviated: No Whipstock: ft (KB)      Test Type: Conventional Bottom Hole (Initial)  
Time Tool Opened: 23:41:03      Tester: Ryan Reynolds  
Time Test Ended: 05:31:18      Unit No: 68  
**Interval: 3372.00 ft (KB) To 3442.00 ft (KB) (TVD)**      Reference Elevations: 1857.00 ft (KB)  
Total Depth: 3442.00 ft (KB) (TVD)      1846.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair      KB to GR/CF: 11.00 ft

**Serial #: 8792      Outside**

Press@RunDepth:      psig @      3376.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2014.06.28      End Date: 2014.06.29      Last Calib.: 2014.06.29  
Start Time: 21:26:36      End Time: 05:33:30      Time On Btm:  
Time Off Btm:

TEST COMMENT: IF: Strong blow . BOB @ 12 min.  
IS: No blow  
FF: Weak blow . 2" - surf.  
FS: No blow



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
80.00	OGCM 2%o, 13%g, 85% m	0.39
0.00	310' GIP	0.00

**Gas Rates**

	Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51995

**DST#: 1**

ATTN: Chuck Schmaltz

Test Start: 2014.06.28 @ 21:31:48

## Tool Information

Drill Pipe:	Length: 3081.00 ft	Diameter: 3.80 inches	Volume: 43.22 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 277.00 ft	Diameter: 2.25 inches	Volume: 1.36 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 44.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 67000.00 lb
Depth to Top Packer:	3372.00 ft			Final 67000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	70.00 ft			
Tool Length:	97.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3346.00	
Shut In Tool	5.00			3351.00	
Hydraulic tool	5.00			3356.00	
Jars	5.00			3361.00	
Safety Joint	2.00			3363.00	
Packer	5.00			3368.00	27.00 Bottom Of Top Packer
Packer	4.00			3372.00	
Stubb	1.00			3373.00	
Perforations	2.00			3375.00	
Change Over Sub	1.00			3376.00	
Recorder	0.00	8790	Inside	3376.00	
Recorder	0.00	8792	Outside	3376.00	
Drill Pipe	32.00			3408.00	
Change Over Sub	1.00			3409.00	
Perforations	30.00			3439.00	
Bullnose	3.00			3442.00	70.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>97.00</b>				



**TRILOBITE  
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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51995

**DST#: 1**

ATTN: Chuck Schmaltz

Test Start: 2014.06.28 @ 21:31:48

## 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:

4800 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.37 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4800.00 ppm

Filter Cake: 0.02 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
80.00	OGCM 2%o, 13%g, 85%m	0.393
0.00	310' GIP	0.000

Total Length: 80.00 ft      Total Volume: 0.393 bbl

Num Fluid Samples: 0

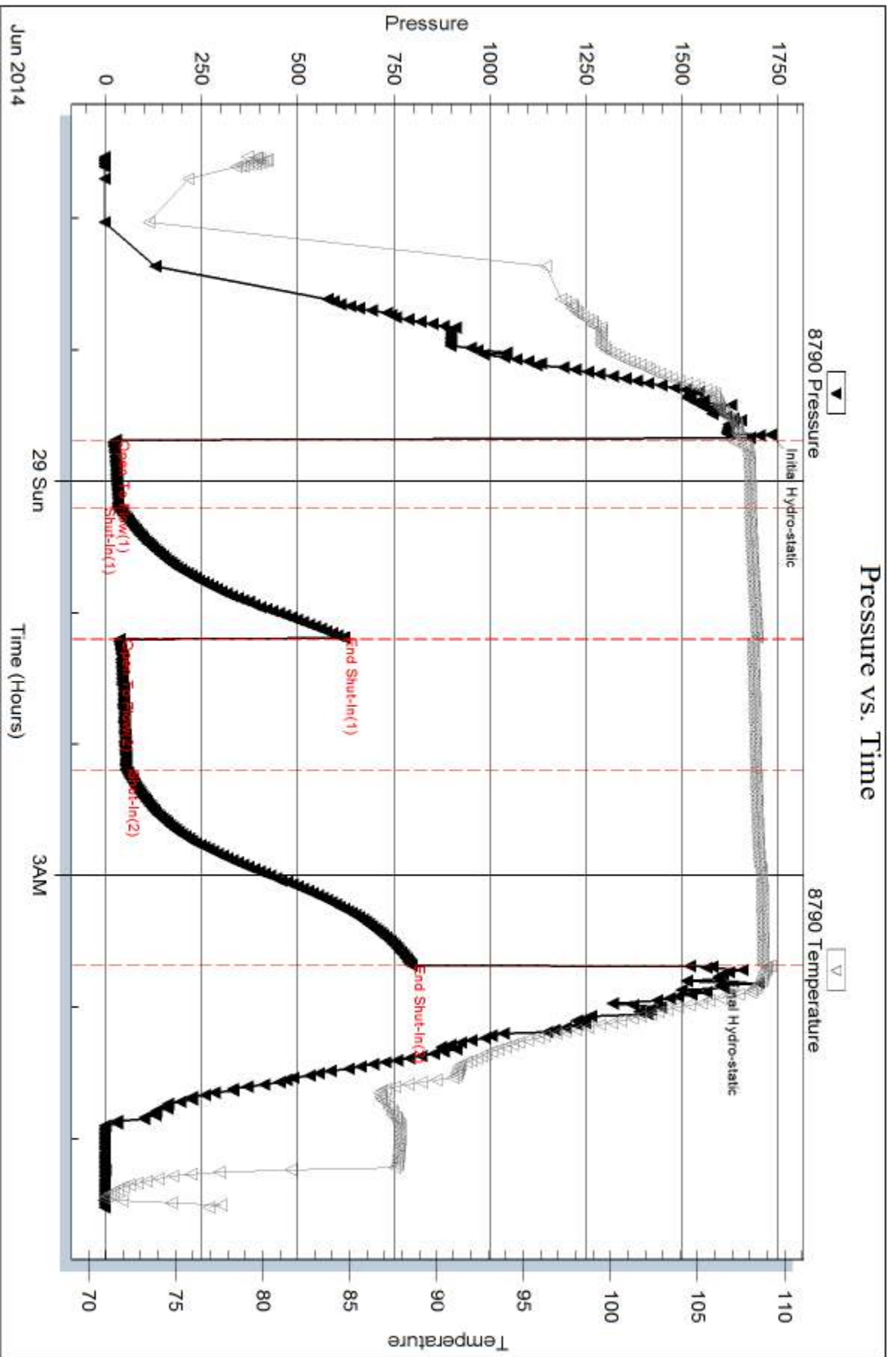
Num Gas Bombs: 0

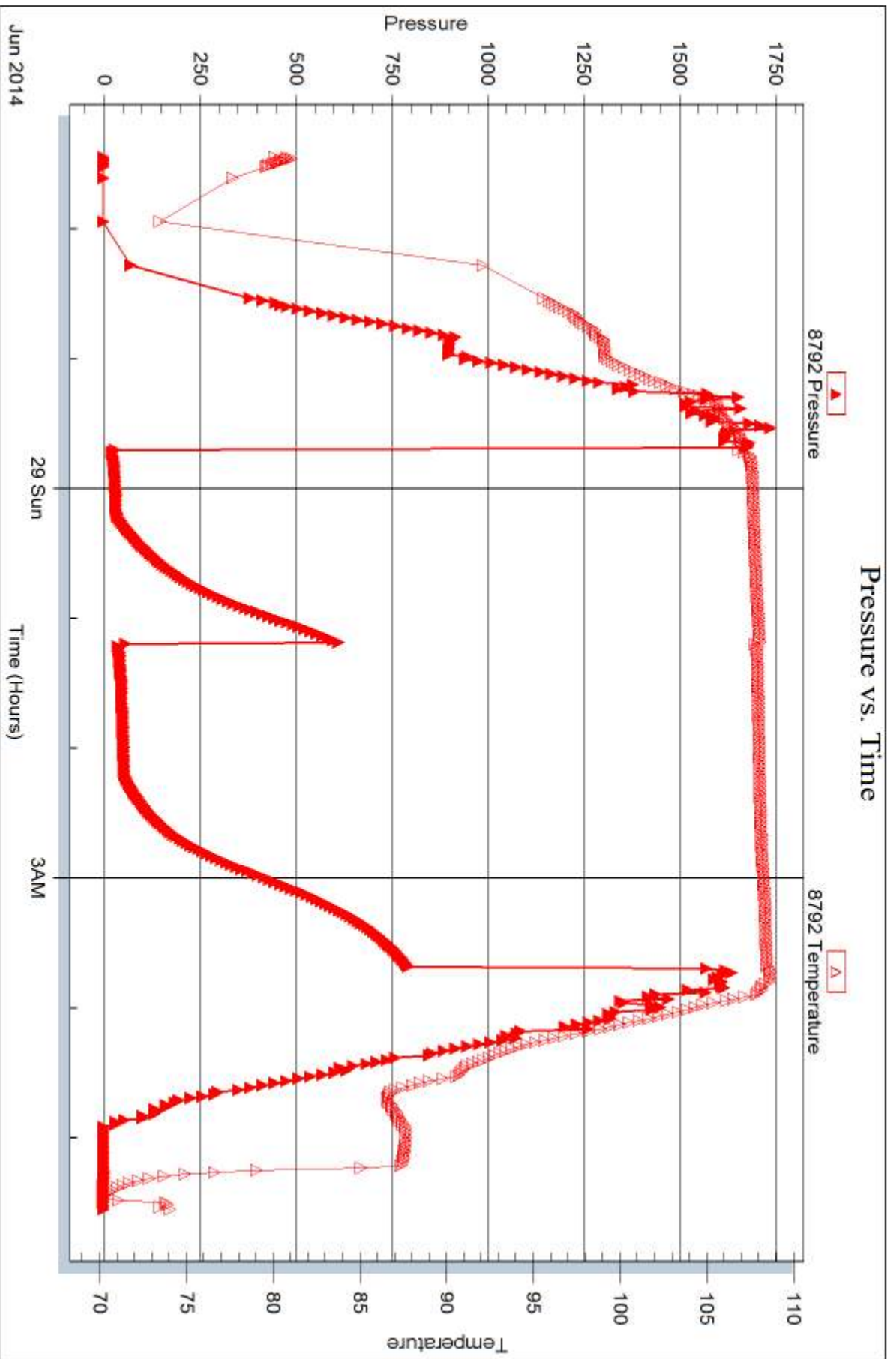
Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

ATTN: Chuck Schmaltz

### **JTT #1-24**

#### **24-23s-12w Stafford,KS**

Start Date: 2014.06.29 @ 15:30:36

End Date: 2014.06.29 @ 23:02:51

Job Ticket #: 51996                      DST #: 2

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

Printed: 2014.07.08 @ 10:06:55





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
 250 N. Water Ste. 300  
 Wichita, KS 67202-1216  
 ATTN: Chuck Schmalz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 51996

**DST#: 2**

Test Start: 2014.06.29 @ 15:30:36

## GENERAL INFORMATION:

Formation: **LKC H- I**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 17:04:21  
 Tester: Ryan Reynolds  
 Time Test Ended: 23:02:51  
 Unit No: 68  
 Interval: **3482.00 ft (KB) To 3524.00 ft (KB) (TVD)**  
 Reference Elevations: 1857.00 ft (KB)  
 Total Depth: 3524.00 ft (KB) (TVD)  
 1846.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 11.00 ft

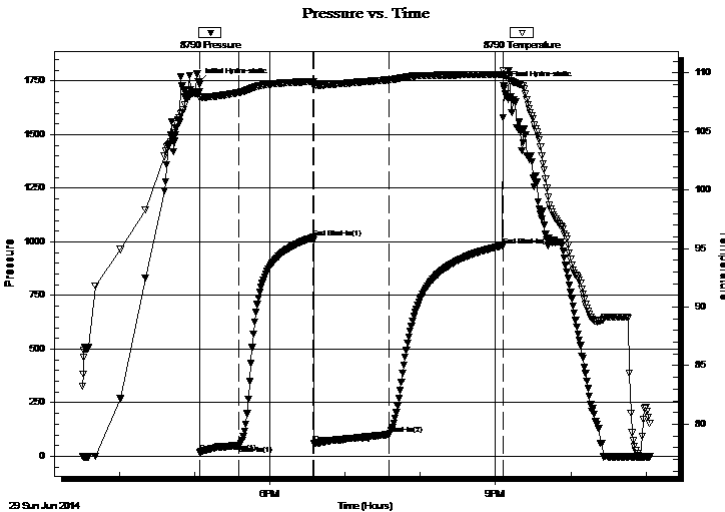
## Serial #: 8790

Inside

Press@RunDepth: 101.60 psig @ 3486.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.06.29 End Date: 2014.06.29 Last Calib.: 2014.06.29  
 Start Time: 15:30:41 End Time: 23:02:50 Time On Btm: 2014.06.29 @ 17:02:51  
 Time Off Btm: 2014.06.29 @ 21:06:36

TEST COMMENT: IF: Weak blow . surf. - 3"  
 IS: No blow  
 FF: Weak blow . surf. - 2"  
 FS: No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1744.29	108.34	Initial Hydro-static
2	18.22	107.89	Open To Flow (1)
33	52.22	108.33	Shut-In(1)
92	1020.66	109.27	End Shut-In(1)
93	60.39	108.83	Open To Flow (2)
153	101.60	109.40	Shut-In(2)
243	982.88	109.87	End Shut-In(2)
244	1726.78	109.86	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	MCW 5% <i>m</i> , 95% <i>w</i>	0.59
60.00	SLI OWCM 1% <i>o</i> , 19% <i>w</i> , 80% <i>m</i>	0.30
0.00	60' GIP	0.00

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)



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# DRILL STEM TEST REPORT

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Wichita, KS 67202-1216  
ATTN: Chuck Schmaltz

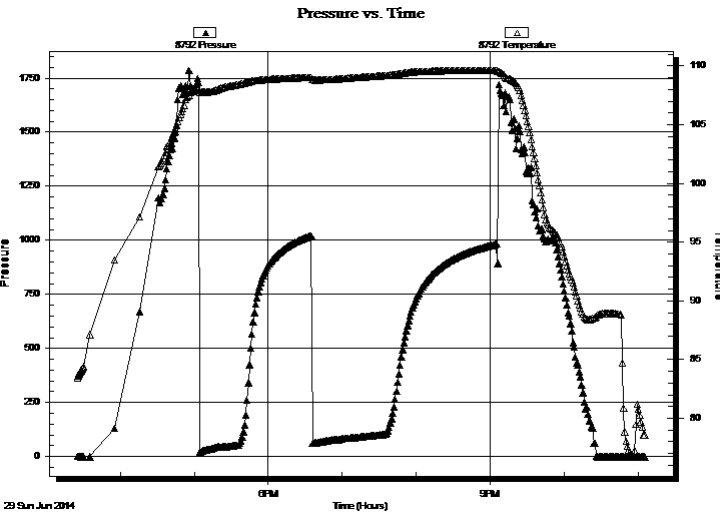
**24-23s-12w Stafford,KS**  
**JTT #1-24**  
Job Ticket: 51996      **DST#: 2**  
Test Start: 2014.06.29 @ 15:30:36

## GENERAL INFORMATION:

Formation: <b>LKC H- I</b>	
Deviated: No Whipstock:                         ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 17:04:21	Tester: Ryan Reynolds
Time Test Ended: 23:02:51	Unit No: 68
<b>Interval: 3482.00 ft (KB) To 3524.00 ft (KB) (TVD)</b>	Reference Elevations: 1857.00 ft (KB)
Total Depth: 3524.00 ft (KB) (TVD)	1846.00 ft (CF)
Hole Diameter: 7.88 inchesHole Condition: Fair	KB to GR/CF: 11.00 ft

<b>Serial #: 8792</b>	<b>Outside</b>		
Press@RunDepth:                         psig @ 3486.00 ft (KB)	Capacity: 8000.00 psig		
Start Date: 2014.06.29                  End Date: 2014.06.29	Last Calib.: 2014.06.29		
Start Time: 15:25:36                    End Time: 23:05:15	Time On Btm:		
	Time Off Btm:		

**TEST COMMENT:** IF: Weak blow . surf. - 3"  
IS: No blow  
FF: Weak blow . surf. - 2"  
FS: No blow



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

Recovery		
Length (ft)	Description	Volume (bbl)
120.00	MCW 5%m, 95%w	0.59
60.00	SLI OWCM 1%o, 19%w , 80%m	0.30
0.00	60' GIP	0.00

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (m³/d)

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51996

**DST#: 2**

ATTN: Chuck Schmaltz

Test Start: 2014.06.29 @ 15:30:36

## Tool Information

Drill Pipe:	Length: 3205.00 ft	Diameter: 3.80 inches	Volume: 44.96 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 277.00 ft	Diameter: 2.25 inches	Volume: 1.36 bbl	Weight to Pull Loose: 73000.00 lb
			<u>Total Volume: 46.32 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	3482.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	69.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3456.00	
Shut In Tool	5.00			3461.00	
Hydraulic tool	5.00			3466.00	
Jars	5.00			3471.00	
Safety Joint	2.00			3473.00	
Packer	5.00			3478.00	27.00 Bottom Of Top Packer
Packer	4.00			3482.00	
Stubb	1.00			3483.00	
Perforations	2.00			3485.00	
Change Over Sub	1.00			3486.00	
Recorder	0.00	8790	Inside	3486.00	
Recorder	0.00	8792	Outside	3486.00	
Drill Pipe	32.00			3518.00	
Change Over Sub	1.00			3519.00	
Perforations	2.00			3521.00	
Bullnose	3.00			3524.00	42.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>69.00</b>				



**TRILOBITE  
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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51996

**DST#: 2**

ATTN: Chuck Schmaltz

Test Start: 2014.06.29 @ 15:30:36

## 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:

78000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.77 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: 0.02 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	MCW 5% <i>m</i> , 95% <i>w</i>	0.590
60.00	SLI OWCM 1% <i>o</i> , 19% <i>w</i> , 80% <i>m</i>	0.295
0.00	60' GIP	0.000

Total Length: 180.00 ft

Total Volume: 0.885 bbl

Num Fluid Samples: 0

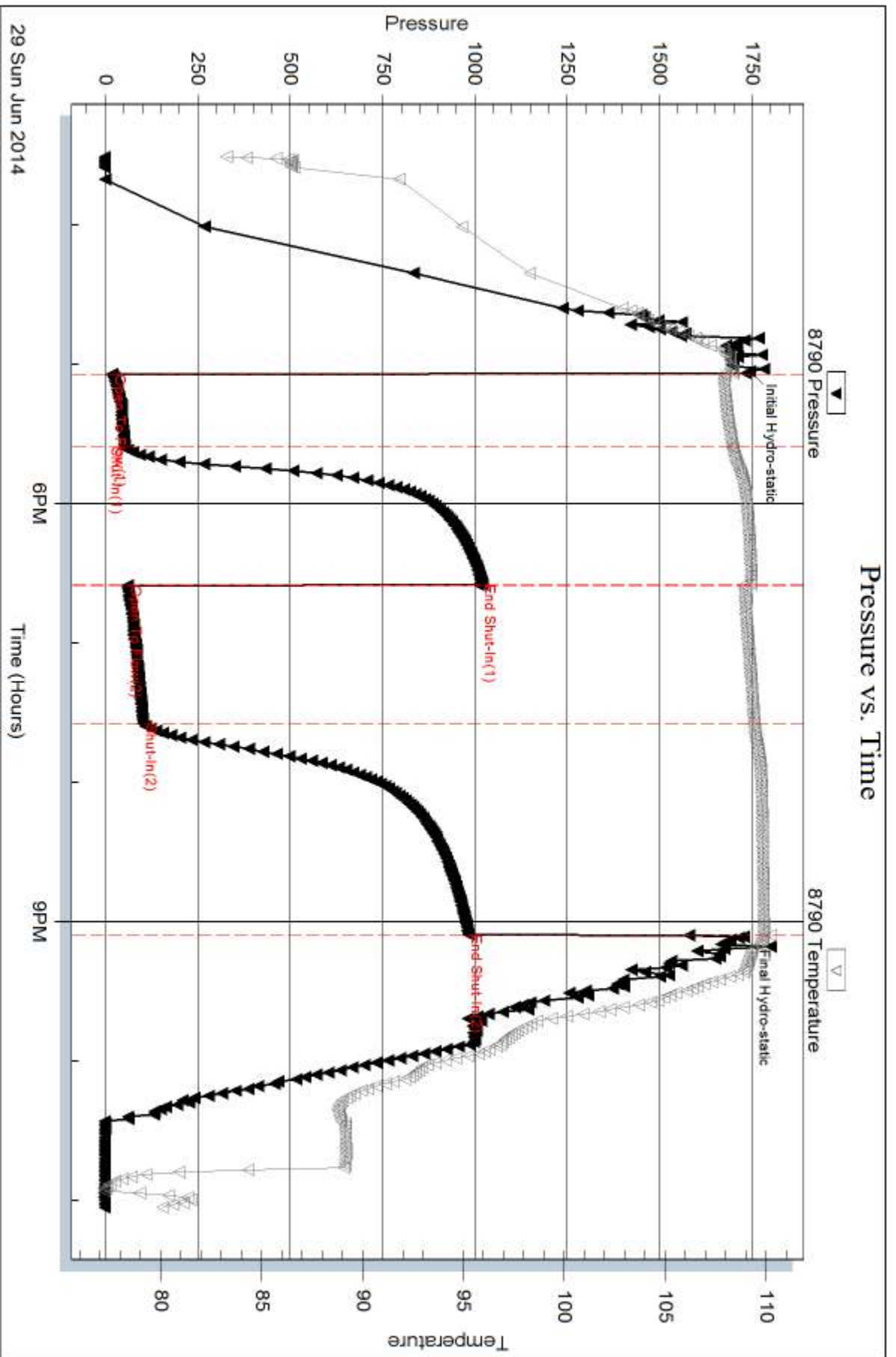
Num Gas Bombs: 0

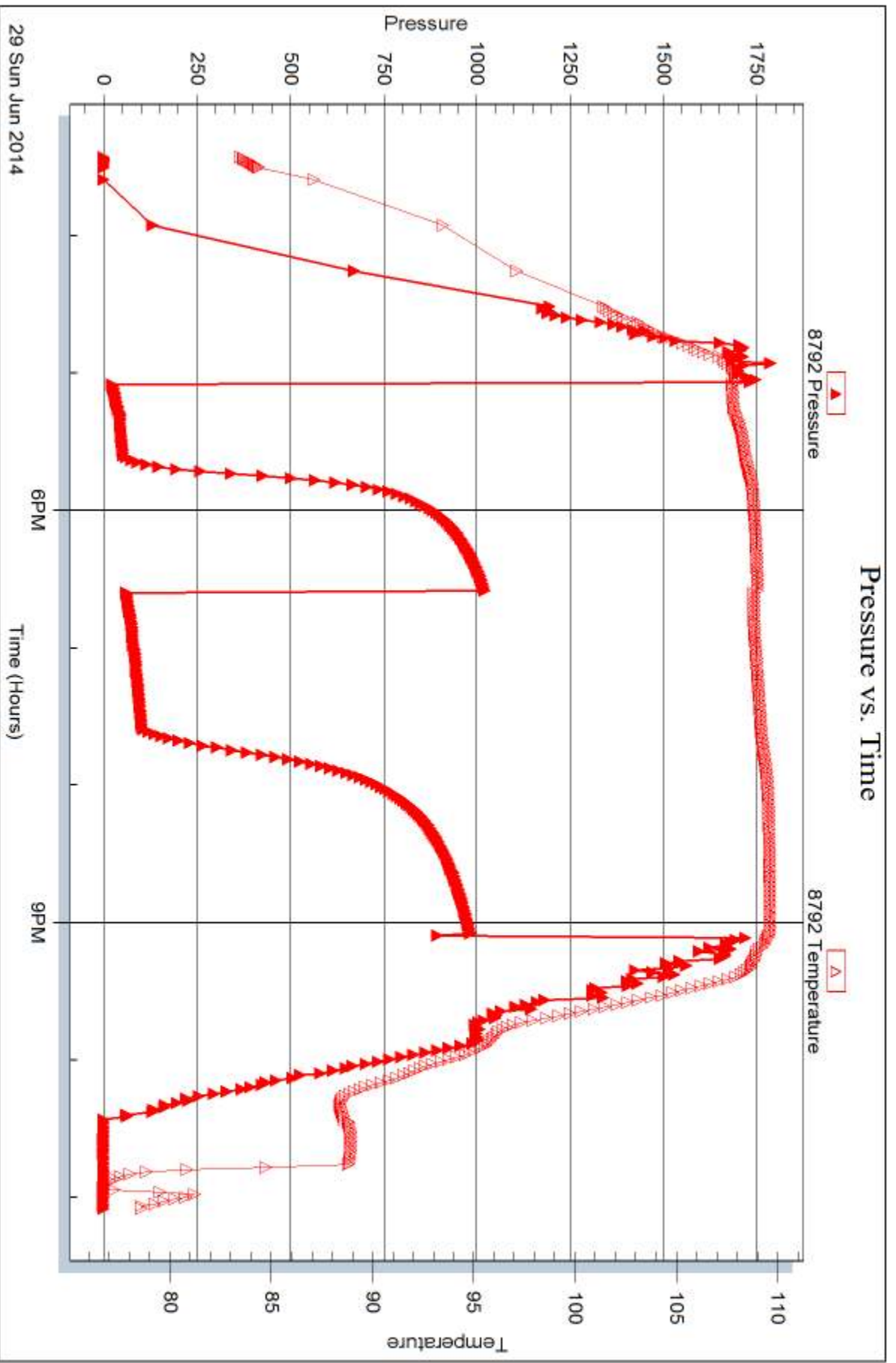
Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

ATTN: Chuck Schmaltz

### **JTT #1-24**

#### **24-23s-12w Stafford,KS**

Start Date: 2014.06.30 @ 10:12:01

End Date: 2014.06.30 @ 18:26:46

Job Ticket #: 51997                      DST #: 3

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

Printed: 2014.07.08 @ 10:06:35



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
 250 N. Water Ste. 300  
 Wichita, KS 67202-1216  
 ATTN: Chuck Schmalz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 51997

**DST#: 3**

Test Start: 2014.06.30 @ 10:12:01

## GENERAL INFORMATION:

Formation: **LKC. J-L**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 12:20:31  
 Time Test Ended: 18:26:46  
 Interval: **3525.00 ft (KB) To 3610.00 ft (KB) (TVD)**  
 Total Depth: 3610.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Reynolds  
 Unit No: 68  
 Reference Elevations: 1857.00 ft (KB)  
 1846.00 ft (CF)  
 KB to GR/CF: 11.00 ft

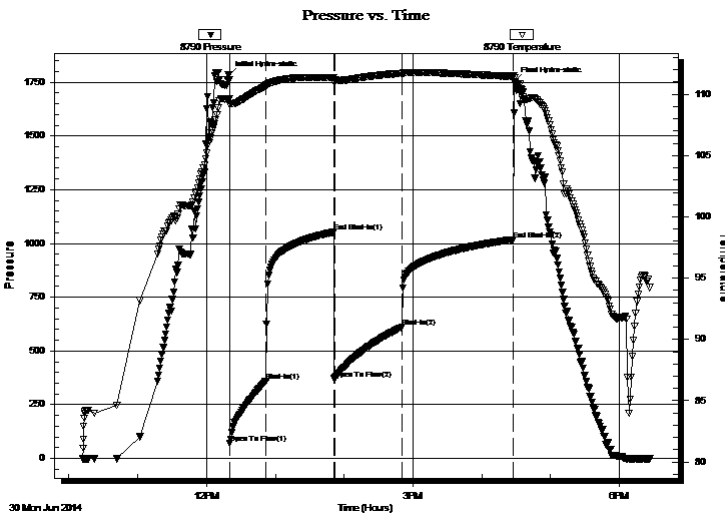
## Serial #: 8790

Inside

Press@RunDepth: 610.98 psig @ 3532.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.06.30 End Date: 2014.06.30 Last Calib.: 2014.06.30  
 Start Time: 10:12:06 End Time: 18:26:45 Time On Btm: 2014.06.30 @ 12:19:01  
 Time Off Btm: 2014.06.30 @ 16:28:31

TEST COMMENT: IF: Strong blow . BOB @ 3 1/2 min.  
 IS: No blow  
 FF: Good blow . 1 - 9".  
 FS: No blow .

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1782.25	109.59	Initial Hydro-static
2	70.78	109.15	Open To Flow (1)
33	360.86	110.66	Shut-In(1)
92	1052.68	111.35	End Shut-In(1)
93	371.25	111.17	Open To Flow (2)
152	610.98	111.68	Shut-In(2)
249	1018.23	111.46	End Shut-In(2)
250	1751.45	111.35	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1245.00	GMCW 2%g, 3%m, 95%w	14.94
0.00	45' GIP	0.00

\* Recovery from multiple tests

## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51997

**DST#: 3**

ATTN: Chuck Schmaltz

Test Start: 2014.06.30 @ 10:12:01

## GENERAL INFORMATION:

Formation: **LKC. J-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:20:31

Time Test Ended: 18:26:46

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Reynolds

Unit No: 68

Interval: **3525.00 ft (KB) To 3610.00 ft (KB) (TVD)**

Reference Elevations: 1857.00 ft (KB)

Total Depth: 3610.00 ft (KB) (TVD)

1846.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

## Serial #: 8792 Outside

Press@RunDepth: psig @ 3532.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.30 End Date: 2014.06.30

Last Calib.: 2014.06.30

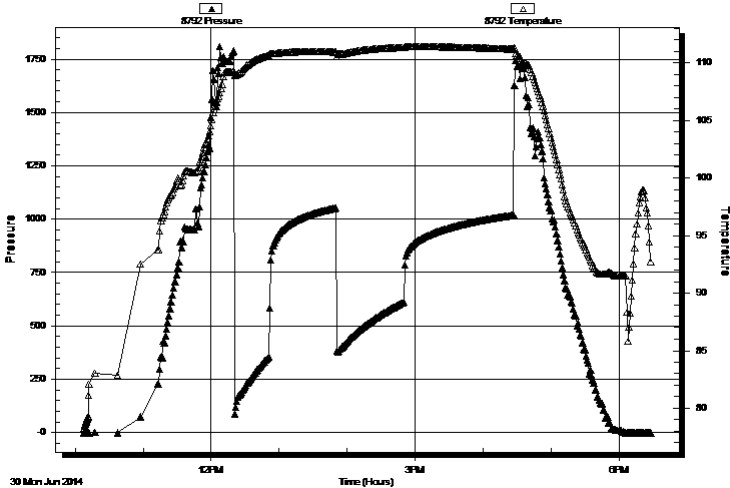
Start Time: 10:07:33 End Time: 18:27:57

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Strong blow . BOB @ 3 1/2 min.  
IS: No blow  
FF: Good blow . 1 - 9".  
FS: No blow .

Pressure vs. Time



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
1245.00	GMCW 2%g, 3%m, 95%w	14.94
0.00	45' GIP	0.00

## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51997

**DST#: 3**

ATTN: Chuck Schmaltz

Test Start: 2014.06.30 @ 10:12:01

## Tool Information

Drill Pipe:	Length: 3236.00 ft	Diameter: 3.80 inches	Volume: 45.39 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 277.00 ft	Diameter: 2.25 inches	Volume: 1.36 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 46.75 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	3525.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	85.00 ft			
Tool Length:	112.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3499.00	
Shut In Tool	5.00			3504.00	
Hydraulic tool	5.00			3509.00	
Jars	5.00			3514.00	
Safety Joint	2.00			3516.00	
Packer	5.00			3521.00	27.00 Bottom Of Top Packer
Packer	4.00			3525.00	
Stubb	1.00			3526.00	
Perforations	5.00			3531.00	
Change Over Sub	1.00			3532.00	
Recorder	0.00	8790	Inside	3532.00	
Recorder	0.00	8792	Outside	3532.00	
Drill Pipe	63.00			3595.00	
Change Over Sub	1.00			3596.00	
Perforations	11.00			3607.00	
Bullnose	3.00			3610.00	85.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>112.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51997

**DST#: 3**

ATTN: Chuck Schmaltz

Test Start: 2014.06.30 @ 10:12:01

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 56.00 sec/qt  
Water Loss: 8.78 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 5200.00 ppm  
Filter Cake: 0.02 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: deg API  
Water Salinity: 76000 ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1245.00	GMCW 2%g, 3%m, 95%w	14.941
0.00	45' GIP	0.000

Total Length: 1245.00 ft      Total Volume: 14.941 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

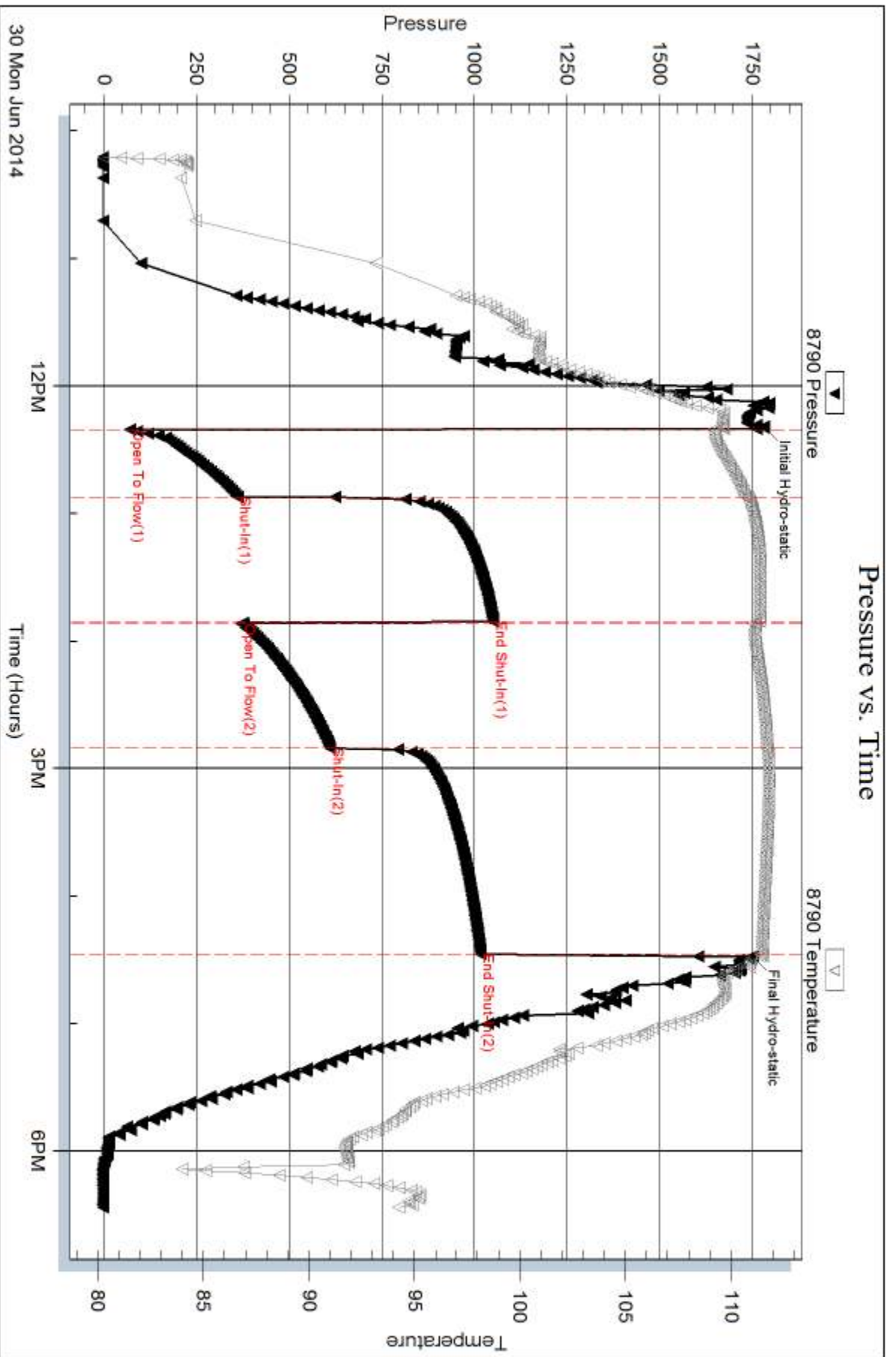
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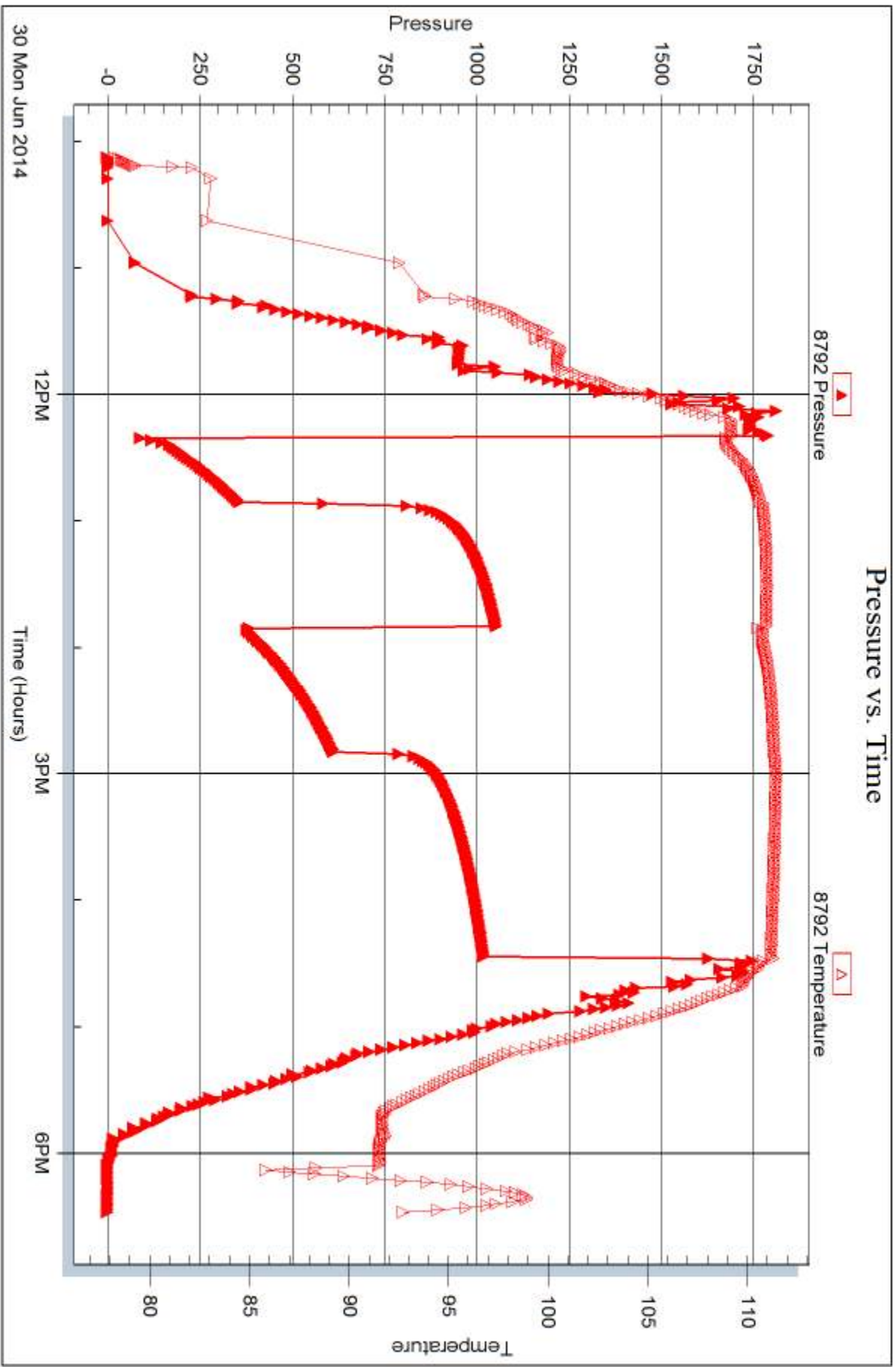
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

ATTN: Chuck Schmaltz

**JTT #1-24**

**24-23s-12w Stafford,KS**

Start Date: 2014.07.01 @ 01:58:00

End Date: 2014.07.01 @ 10:02:00

Job Ticket #: 51998                      DST #: 4

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

Printed: 2014.07.08 @ 10:06:13

Murfin Drlg. Co., Inc. 24-23s-12w Stafford,KS JTT #1-24 DST # 4 Viola 2014.07.01



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water Ste. 300  
Wichita, KS 67202-1216  
ATTN: Chuck Schmalz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 51998

**DST#: 4**

Test Start: 2014.07.01 @ 01:58:00

## GENERAL INFORMATION:

Formation: **Viola**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 03:51:30  
 Time Test Ended: 10:02:00  
 Interval: **3605.00 ft (KB) To 3690.00 ft (KB) (TVD)**  
 Total Depth: 3690.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Reynolds  
 Unit No: 68  
 Reference Elevations: 1857.00 ft (KB)  
 1846.00 ft (CF)  
 KB to GR/CF: 11.00 ft

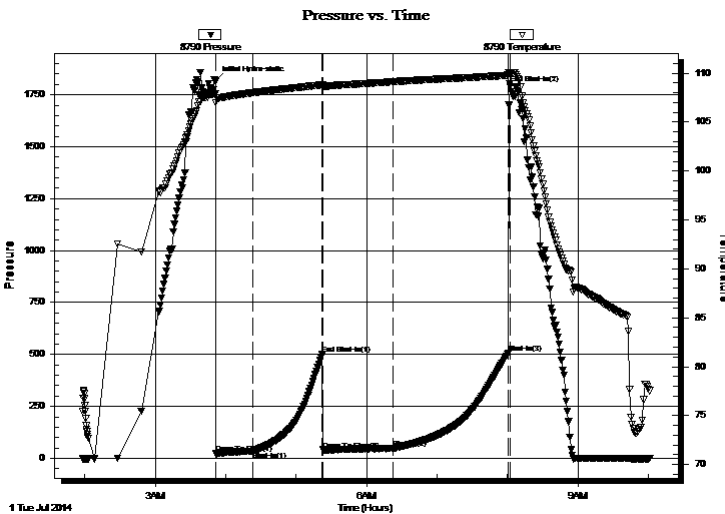
## Serial #: 8790

Inside

Press@RunDepth: 47.91 psig @ 3612.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.07.01 End Date: 2014.07.01 Last Calib.: 2014.07.01  
 Start Time: 01:58:05 End Time: 10:01:59 Time On Btm: 2014.07.01 @ 03:51:15  
 Time Off Btm:

TEST COMMENT: IF: Weak blow . surf. - 1"  
 IS: No blow  
 FF: Weak blow . surf. - 2"  
 FS: No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1816.48	107.90	Initial Hydro-static
1	21.72	106.96	Open To Flow (1)
32	34.98	108.00	Shut-In(1)
91	501.36	108.81	End Shut-In(1)
92	40.72	108.65	Open To Flow (2)
152	47.91	109.13	Shut-In(2)
250	505.45	109.80	Shut-In(3)
251	1802.14	110.05	End Shut-In(2)

## Recovery

Length (ft)	Description	Volume (bbl)
65.00	OCM 5%, 95% m	0.32

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water Ste. 300  
Wichita, KS 67202-1216  
ATTN: Chuck Schmaltz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 51998

**DST#: 4**

Test Start: 2014.07.01 @ 01:58:00

## GENERAL INFORMATION:

Formation: **Viola**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:51:30

Time Test Ended: 10:02:00

**Interval: 3605.00 ft (KB) To 3690.00 ft (KB) (TVD)**

Total Depth: 3690.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Reynolds

Unit No: 68

Reference Elevations: 1857.00 ft (KB)

1846.00 ft (CF)

KB to GR/CF: 11.00 ft

**Serial #: 8792 Outside**

Press@RunDepth: psig @ 3612.00 ft (KB)

Start Date: 2014.07.01

End Date:

2014.07.01

Start Time: 01:52:06

End Time:

10:01:45

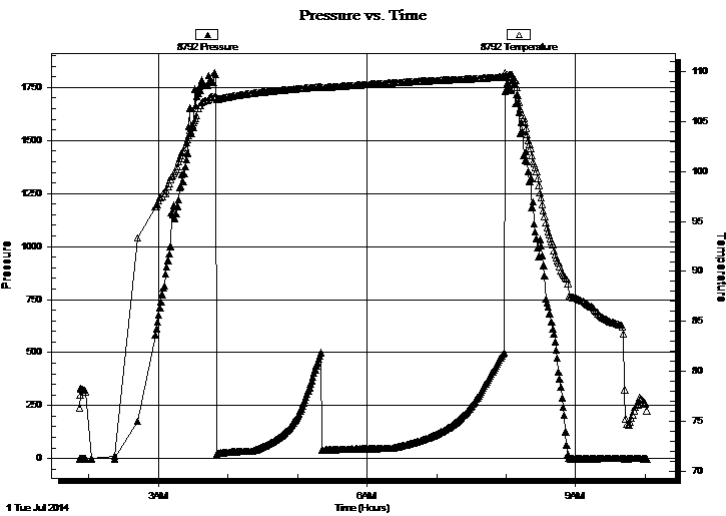
Capacity: 8000.00 psig

Last Calib.: 2014.07.01

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Weak blow . surf. - 1"  
IS: No blow  
FF: Weak blow . surf. - 2"  
FS: No blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
65.00	OCM 5%, 95% m	0.32

## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51998

**DST#: 4**

ATTN: Chuck Schmaltz

Test Start: 2014.07.01 @ 01:58:00

## Tool Information

Drill Pipe:	Length: 3330.00 ft	Diameter: 3.80 inches	Volume: 46.71 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 277.00 ft	Diameter: 2.25 inches	Volume: 1.36 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 48.07 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 69000.00 lb
Depth to Top Packer:	3605.00 ft			Final 69000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	85.00 ft			
Tool Length:	112.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3579.00	
Shut In Tool	5.00			3584.00	
Hydraulic tool	5.00			3589.00	
Jars	5.00			3594.00	
Safety Joint	2.00			3596.00	
Packer	5.00			3601.00	27.00 Bottom Of Top Packer
Packer	4.00			3605.00	
Stubb	1.00			3606.00	
Perforations	5.00			3611.00	
Change Over Sub	1.00			3612.00	
Recorder	0.00	8790	Inside	3612.00	
Recorder	0.00	8792	Outside	3612.00	
Drill Pipe	64.00			3676.00	
Change Over Sub	1.00			3677.00	
Perforations	10.00			3687.00	
Bullnose	3.00			3690.00	85.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>112.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51998

**DST#: 4**

ATTN: Chuck Schmaltz

Test Start: 2014.07.01 @ 01:58:00

## 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:

6700 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6700.00 ppm

Filter Cake: 0.02 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	OCM 5%o, 95%m	0.320

Total Length: 65.00 ft      Total Volume: 0.320 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

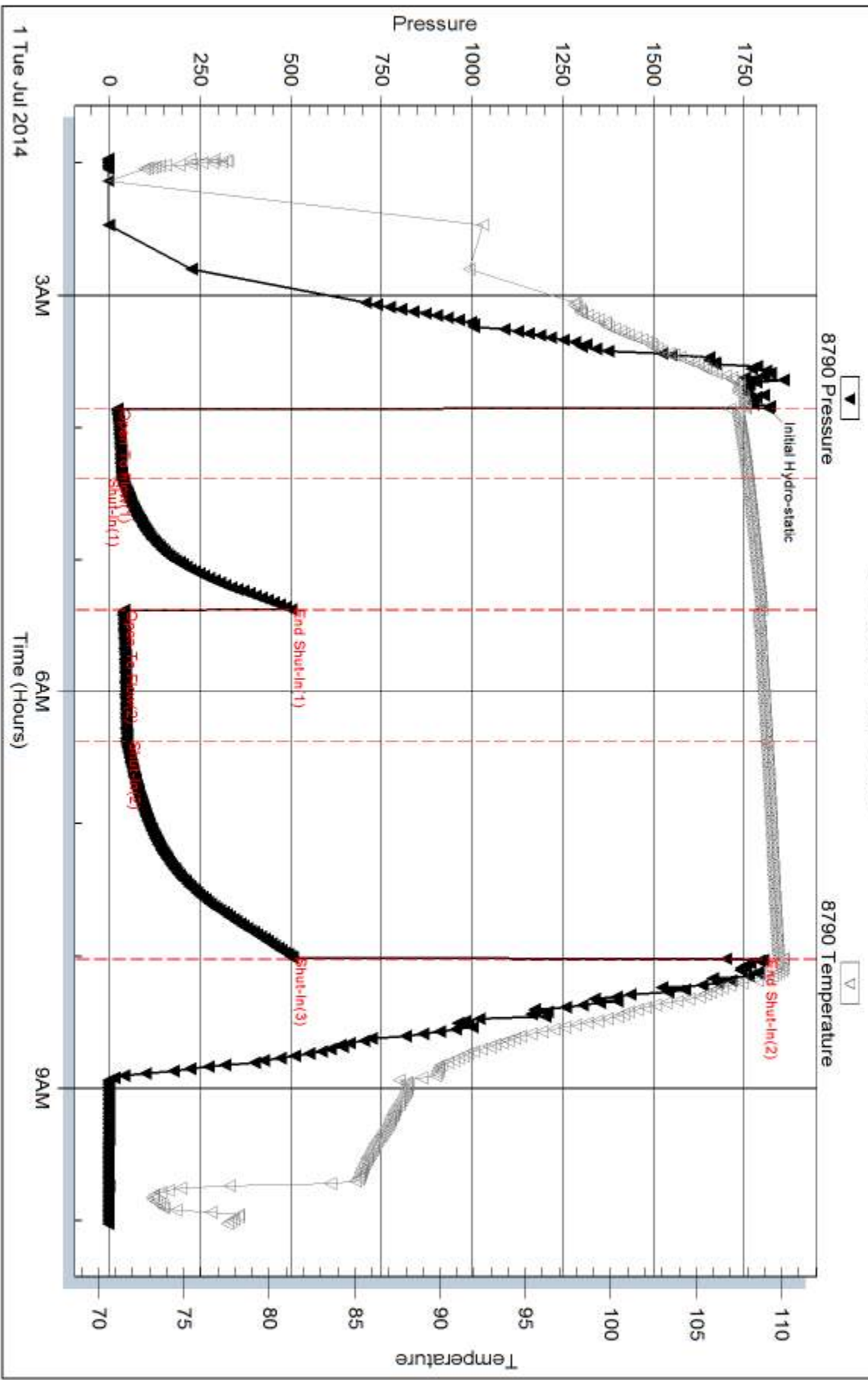
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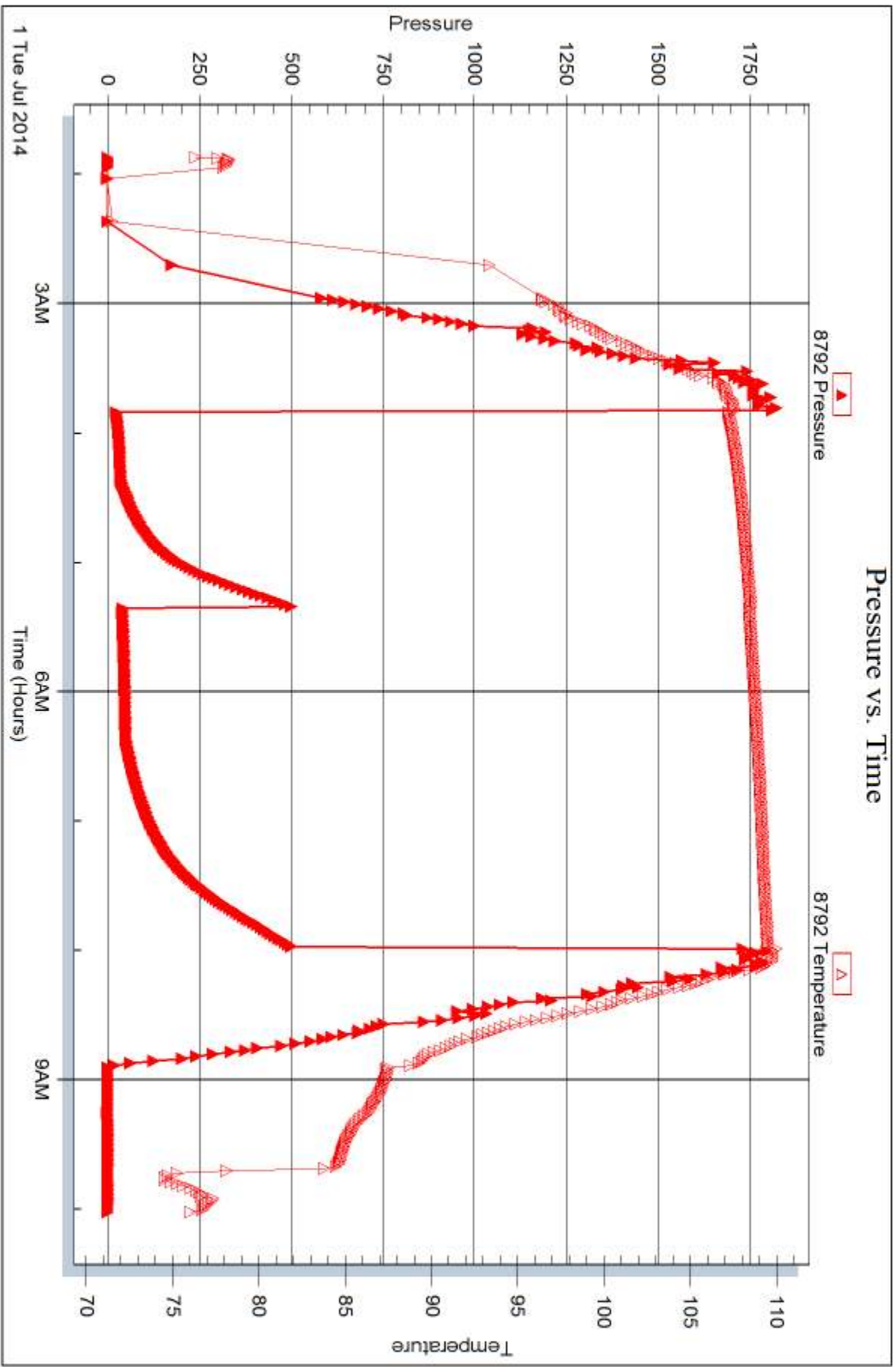
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

ATTN: Chuck Schmaltz

### **JTT #1-24**

#### **24-23s-12w Stafford,KS**

Start Date: 2014.07.01 @ 17:07:47

End Date: 2014.07.02 @ 02:50:47

Job Ticket #: 51999                      DST #: 5

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

Printed: 2014.07.08 @ 10:05:51

Murfin Drlg. Co., Inc. 24-23s-12w Stafford,KS JTT #1-24 DST # 5 Arbuckle 2014.07.01



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
 250 N. Water Ste. 300  
 Wichita, KS 67202-1216  
 ATTN: Chuck Schmaltz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 51999

**DST#: 5**

Test Start: 2014.07.01 @ 17:07:47

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 19:01:47  
 Time Test Ended: 02:50:47  
 Interval: **3680.00 ft (KB) To 3750.00 ft (KB) (TVD)**  
 Total Depth: 3750.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Reynolds  
 Unit No: 68  
 Reference Elevations: 1857.00 ft (KB)  
 1846.00 ft (CF)  
 KB to GR/CF: 11.00 ft

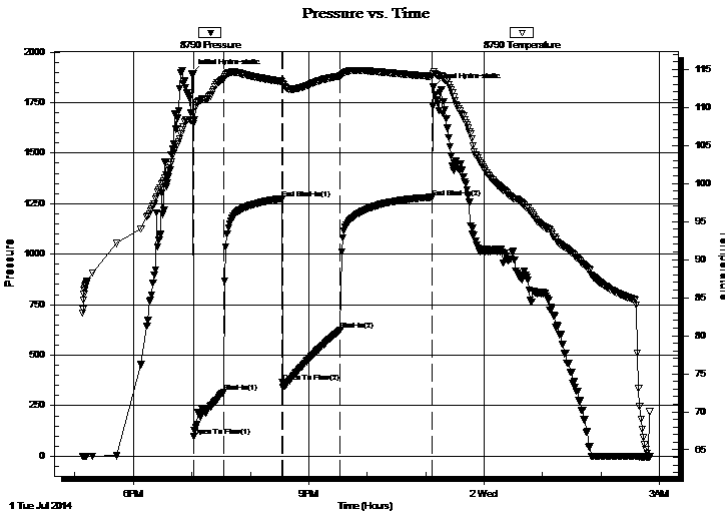
## Serial #: 8790

Inside

Press@RunDepth: 624.98 psig @ 3687.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.07.01 End Date: 2014.07.02 Last Calib.: 2014.07.02  
 Start Time: 17:07:52 End Time: 02:50:47 Time On Btm: 2014.07.01 @ 19:00:02  
 Time Off Btm: 2014.07.01 @ 23:07:47

TEST COMMENT: IF: Strong blow . BOB @ 4min.  
 IS: Weak surf. blow  
 FF: Strong blow . BOB @ 4min.  
 FS: No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1895.05	108.28	Initial Hydro-static
2	96.83	107.82	Open To Flow (1)
33	317.64	113.75	Shut-In(1)
93	1274.90	113.42	End Shut-In(1)
93	365.62	113.08	Open To Flow (2)
153	624.98	114.11	Shut-In(2)
247	1281.70	114.04	End Shut-In(2)
248	1826.23	114.48	Final Hydro-static

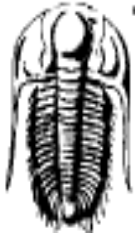
## Recovery

Length (ft)	Description	Volume (bbl)
1660.00	Clean gassy Oil 10%g, 90%o	20.76
0.00	(occas. spots of mud in rec.)	0.00

\* Recovery from multiple tests

## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
 250 N. Water Ste. 300  
 Wichita, KS 67202-1216  
 ATTN: Chuck Schmalz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 51999      **DST#: 5**

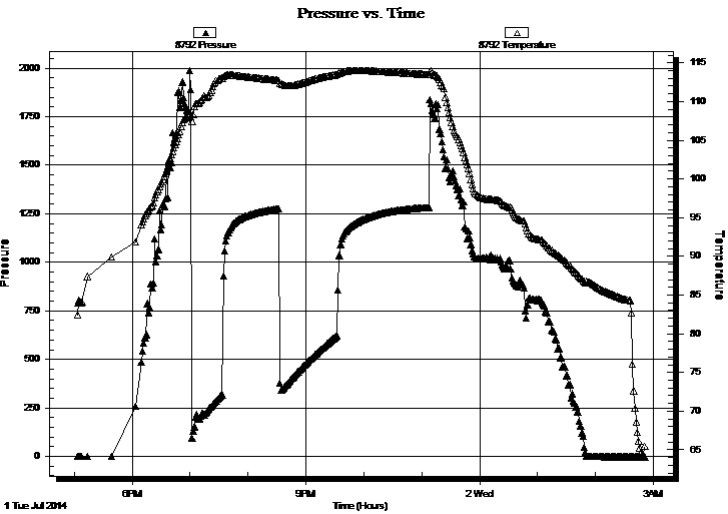
Test Start: 2014.07.01 @ 17:07:47

**GENERAL INFORMATION:**

Formation: <b>Arbuckle</b>		Test Type:    Conventional Bottom Hole (Reset)
Deviated:      No    Whipstock:	ft (KB)	Tester:      Ryan Reynolds
Time Tool Opened: 19:01:47		Unit No:     68
Time Test Ended: 02:50:47		Reference Elevations:    1857.00 ft (KB)
<b>Interval:      3680.00 ft (KB) To 3750.00 ft (KB) (TVD)</b>		1846.00 ft (CF)
Total Depth:    3750.00 ft (KB) (TVD)		KB to GR/CF:      11.00 ft
Hole Diameter:    7.88 inches	Hole Condition: Fair	

<b>Serial #: 8792</b>	<b>Outside</b>		
Press@RunDepth:	psig @ 3687.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2014.07.01    End Date: 2014.07.02	Last Calib.:	2014.07.02
Start Time:	17:03:34    End Time: 02:51:44	Time On Btm:	
		Time Off Btm:	

**TEST COMMENT:** IF: Strong blow . BOB @ 4min.  
 IS: Weak surf. blow  
 FF: Strong blow . BOB @ 4min.  
 FS: No blow



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

Recovery		
Length (ft)	Description	Volume (bbl)
1660.00	Clean gassy Oil 10%g, 90%o	20.76
0.00	(occas. spots of mud in rec.)	0.00

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51999

**DST#: 5**

ATTN: Chuck Schmaltz

Test Start: 2014.07.01 @ 17:07:47

## Tool Information

Drill Pipe:	Length: 3393.00 ft	Diameter: 3.80 inches	Volume: 47.59 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 277.00 ft	Diameter: 2.25 inches	Volume: 1.36 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 48.95 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	3680.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	70.00 ft			
Tool Length:	97.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3654.00	
Shut In Tool	5.00			3659.00	
Hydraulic tool	5.00			3664.00	
Jars	5.00			3669.00	
Safety Joint	2.00			3671.00	
Packer	5.00			3676.00	27.00 Bottom Of Top Packer
Packer	4.00			3680.00	
Stubb	1.00			3681.00	
Perforations	5.00			3686.00	
Change Over Sub	1.00			3687.00	
Recorder	0.00	8790	Inside	3687.00	
Recorder	0.00	8792	Outside	3687.00	
Drill Pipe	32.00			3719.00	
Change Over Sub	1.00			3720.00	
Perforations	27.00			3747.00	
Bullnose	3.00			3750.00	70.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>97.00</b>				





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 51999

**DST#: 5**

ATTN: Chuck Schmaltz

Test Start: 2014.07.01 @ 17:07:47

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6400.00 ppm

Filter Cake: 0.02 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1660.00	Clean gassy Oil 10%g, 90%o	20.762
0.00	(occas. spots of mud in rec.)	0.000

Total Length: 1660.00 ft      Total Volume: 20.762 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

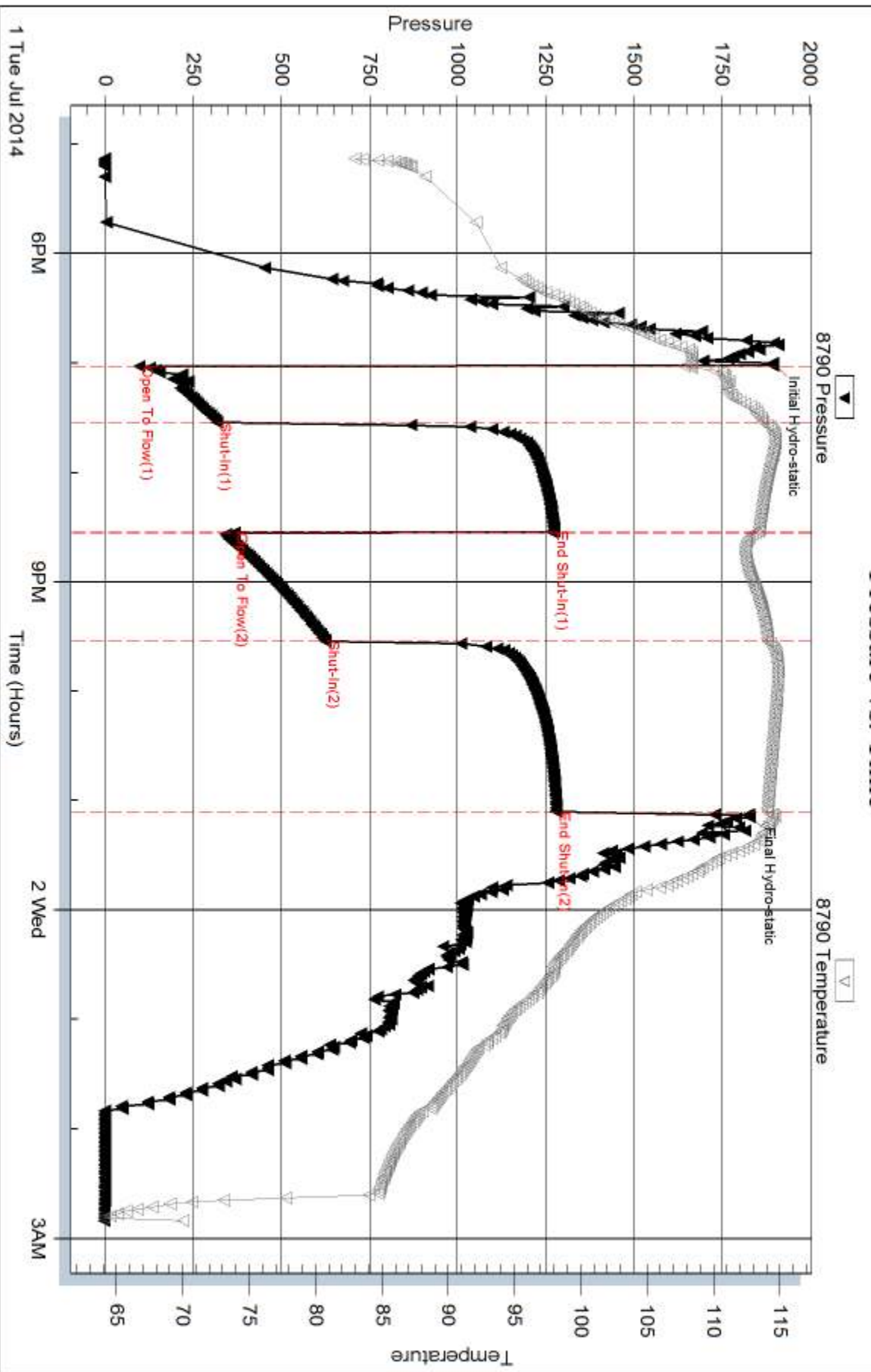
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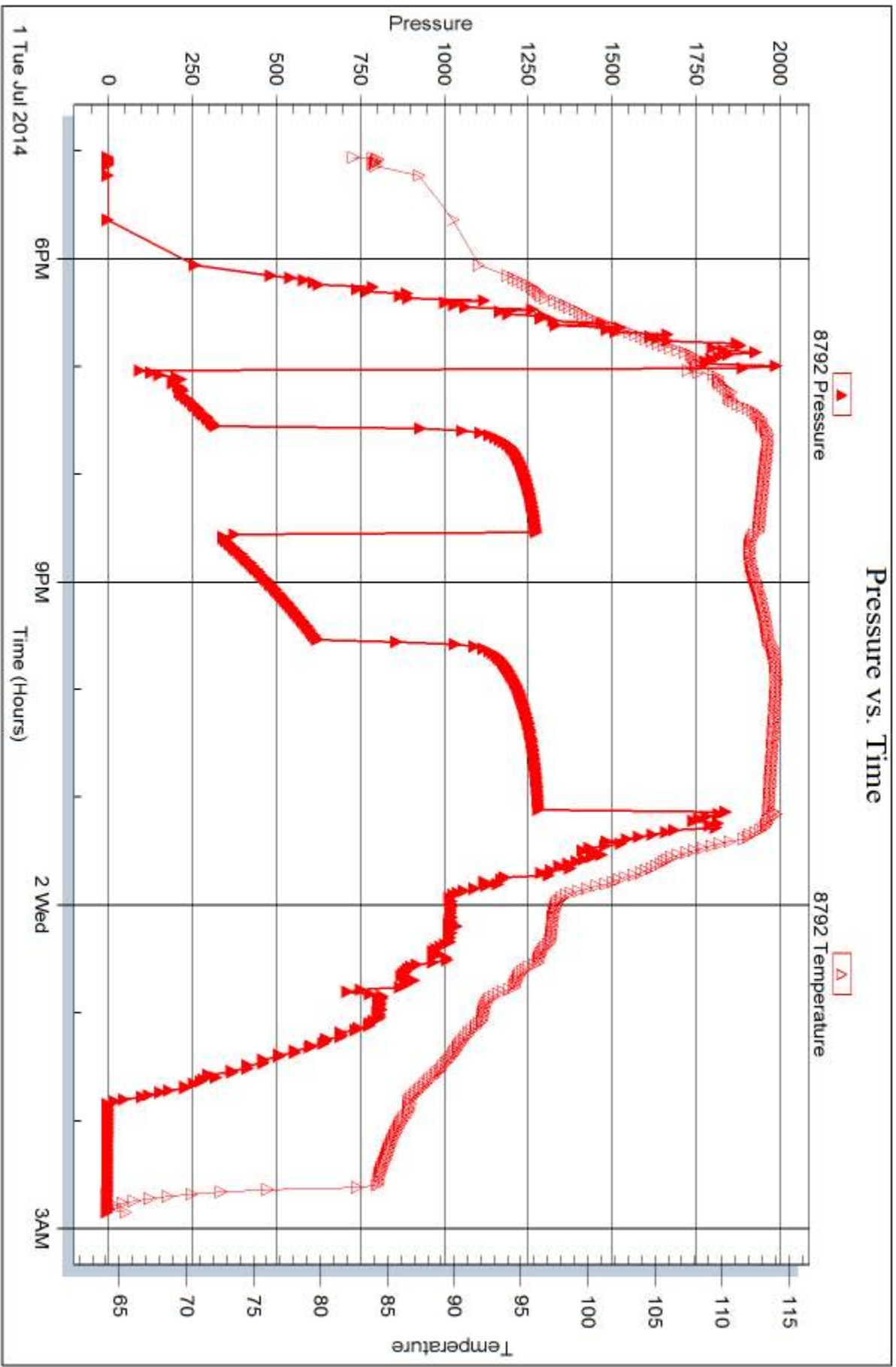
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

ATTN: Chuck Schmaltz

**JTT #1-24**

**24-23s-12w Stafford,KS**

Start Date: 2014.07.02 @ 09:37:41

End Date: 2014.07.02 @ 18:38:41

Job Ticket #: 52000                      DST #: 6

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

Printed: 2014.07.08 @ 10:05:29



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
 250 N. Water Ste. 300  
 Wichita, KS 67202-1216  
 ATTN: Chuck Schmaltz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 52000

**DST#: 6**

Test Start: 2014.07.02 @ 09:37:41

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:38:11  
 Time Test Ended: 18:38:41  
 Interval: **3750.00 ft (KB) To 3760.00 ft (KB) (TVD)**  
 Total Depth: 3760.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Reynolds  
 Unit No: 68  
 Reference Elevations: 1857.00 ft (KB)  
 1846.00 ft (CF)  
 KB to GR/CF: 11.00 ft

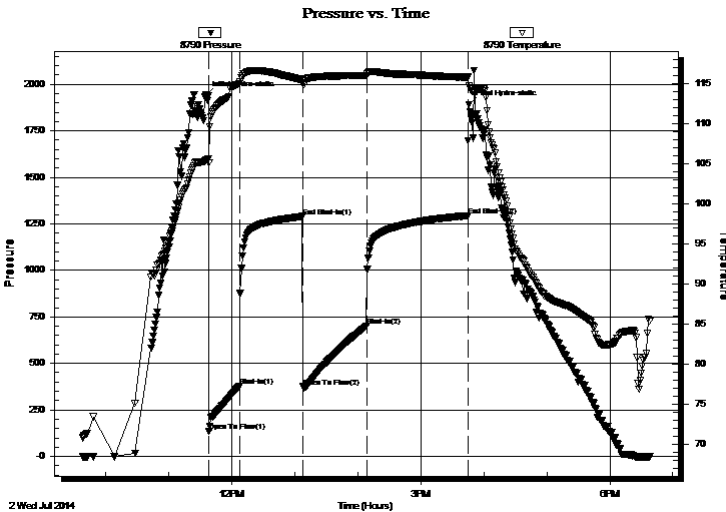
## Serial #: 8790

Inside

Press@RunDepth: 700.67 psig @ 3751.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.07.02 End Date: 2014.07.02 Last Calib.: 2014.07.02  
 Start Time: 09:37:46 End Time: 18:38:41 Time On Btm: 2014.07.02 @ 11:35:11  
 Time Off Btm: 2014.07.02 @ 15:45:56

TEST COMMENT: IF: Strong blow . BOB @ 3 min.  
 IS: Weak dying surf. blow .  
 FF: Strong blow . BOB @ 5 min.  
 FS: No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1940.27	105.47	Initial Hydro-static
3	136.76	105.14	Open To Flow (1)
33	379.17	114.98	Shut-In(1)
93	1289.69	115.46	End Shut-In(1)
93	374.28	115.00	Open To Flow (2)
153	700.67	116.01	Shut-In(2)
250	1293.90	115.81	End Shut-In(2)
251	1892.32	114.68	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	GMWCO 10%g, 20%m, 25%w, 45%o	0.59
1925.00	Clean Gassy Oil 15%g, 85%o	25.57
0.00	60' GIP	0.00

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water Ste. 300  
Wichita, KS 67202-1216  
ATTN: Chuck Schmalz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 52000

**DST#: 6**

Test Start: 2014.07.02 @ 09:37:41

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:38:11

Time Test Ended: 18:38:41

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Reynolds

Unit No: 68

**Interval: 3750.00 ft (KB) To 3760.00 ft (KB) (TVD)**

Total Depth: 3760.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1857.00 ft (KB)

1846.00 ft (CF)

KB to GR/CF: 11.00 ft

**Serial #: 8792 Outside**

Press@RunDepth: psig @ 3751.00 ft (KB)

Start Date: 2014.07.02

End Date:

2014.07.02

Start Time: 09:33:15

End Time:

18:43:10

Capacity: 8000.00 psig

Last Calib.:

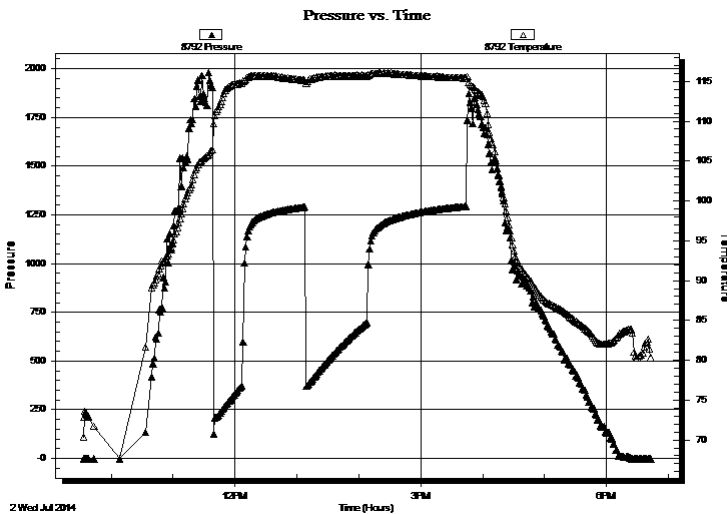
2014.07.02

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Strong blow . BOB @ 3 min.  
IS: Weak dying surf. blow .  
FF: Strong blow . BOB @ 5 min.  
FS: No blow

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	GMWCO 10%g, 20%m, 25%w, 45%o	0.59
1925.00	Clean Gassy Oil 15%g, 85%o	25.57
0.00	60' GIP	0.00

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 52000

**DST#: 6**

ATTN: Chuck Schmaltz

Test Start: 2014.07.02 @ 09:37:41

## Tool Information

Drill Pipe:	Length: 3456.00 ft	Diameter: 3.80 inches	Volume: 48.48 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 277.00 ft	Diameter: 2.25 inches	Volume: 1.36 bbl	Weight to Pull Loose: 94000.00 lb
			<u>Total Volume: 49.84 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 69000.00 lb
Depth to Top Packer:	3750.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	37.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3724.00	
Shut In Tool	5.00			3729.00	
Hydraulic tool	5.00			3734.00	
Jars	5.00			3739.00	
Safety Joint	2.00			3741.00	
Packer	5.00			3746.00	27.00 Bottom Of Top Packer
Packer	4.00			3750.00	
Stubb	1.00			3751.00	
Recorder	0.00	8790	Inside	3751.00	
Recorder	0.00	8792	Outside	3751.00	
Perforations	6.00			3757.00	
Bullnose	3.00			3760.00	10.00 Bottom Packers & Anchor

**Total Tool Length: 37.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 52000

**DST#: 6**

ATTN: Chuck Schmaltz

Test Start: 2014.07.02 @ 09:37:41

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 65.00 sec/qt  
Water Loss: 8.39 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 6400.00 ppm  
Filter Cake: 0.02 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: deg API  
Water Salinity: 24000 ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	GMWCO 10%g, 20%m, 25%w , 45%o	0.590
1925.00	Clean Gassy Oil 15%g, 85%o	25.572
0.00	60' GIP	0.000

Total Length: 2045.00 ft      Total Volume: 26.162 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

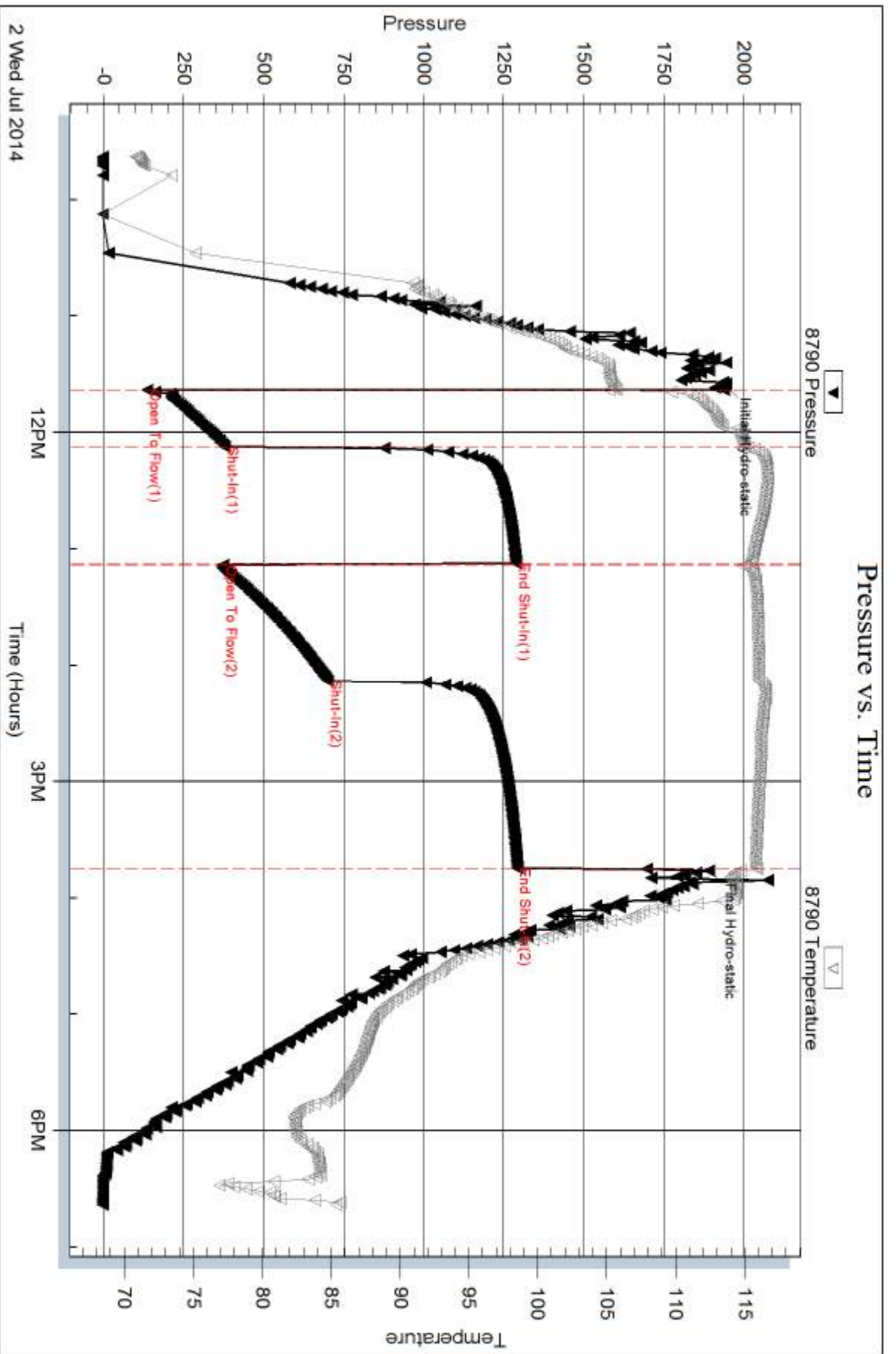
Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:



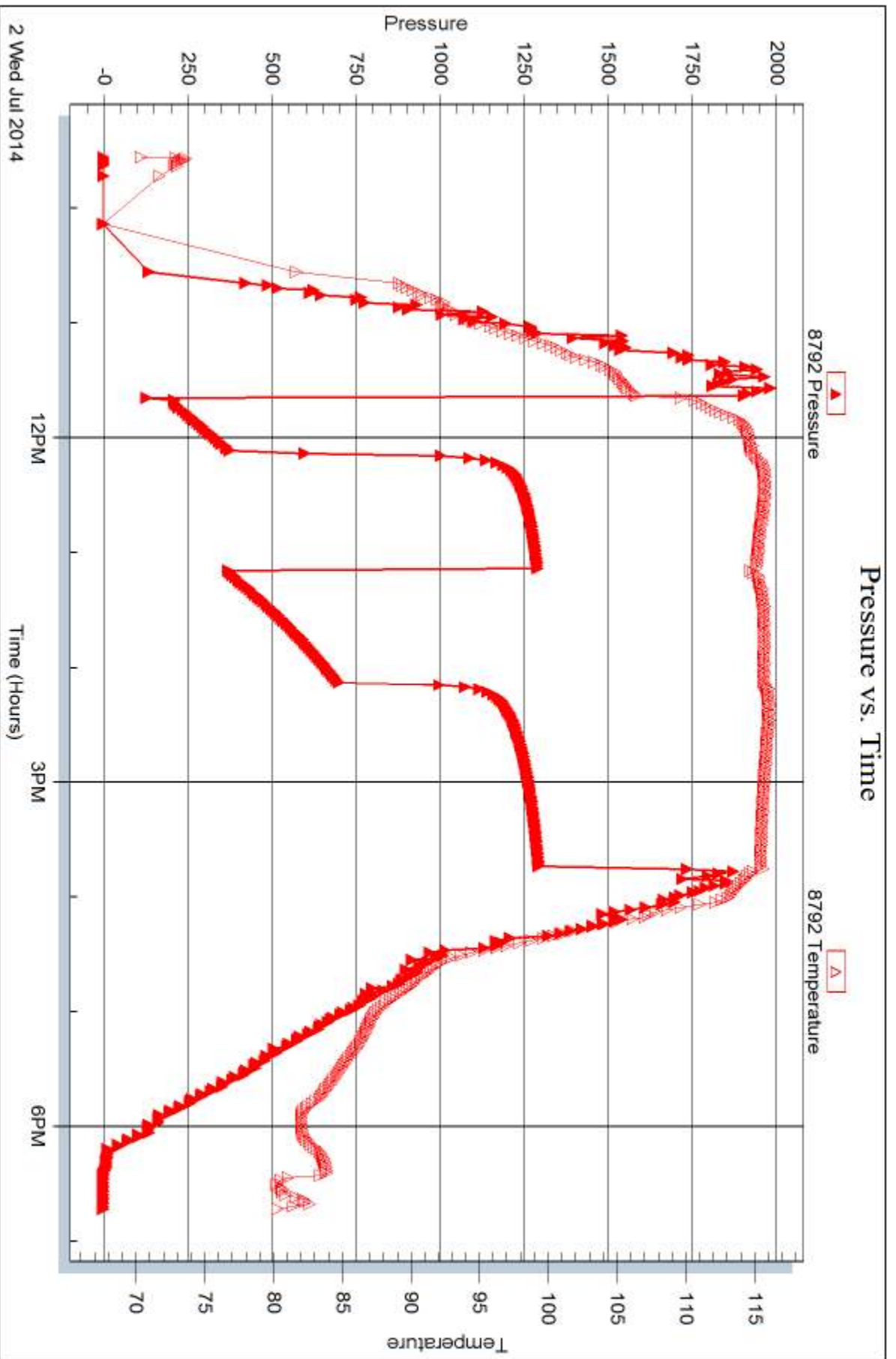


Serial #: 8792

Outside Murfin Dtg. Co., Inc.

JTT #1-24

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 52000

Printed: 2014.07.08 @ 10:05:30



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

ATTN: Chuck Schmaltz

**JTT #1-24**

**24-23s-12w Stafford,KS**

Start Date: 2014.07.03 @ 01:26:45

End Date: 2014.07.03 @ 09:25:30

Job Ticket #: 54151                      DST #: 7

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

Printed: 2014.07.08 @ 10:04:58

Murfin Drlg. Co., Inc. 24-23s-12w Stafford,KS JTT #1-24 DST # 7 Arbuckle 2014.07.03



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
 250 N. Water Ste. 300  
 Wichita, KS 67202-1216  
 ATTN: Chuck Schmalz

**24-23s-12w Stafford,KS**

**JTT #1-24**

Job Ticket: 54151

**DST#: 7**

Test Start: 2014.07.03 @ 01:26:45

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 03:11:30  
 Time Test Ended: 09:25:30  
 Interval: **3760.00 ft (KB) To 3770.00 ft (KB) (TVD)**  
 Total Depth: 3770.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Reynolds  
 Unit No: 68  
 Reference Elevations: 1857.00 ft (KB)  
 1846.00 ft (CF)  
 KB to GR/CF: 11.00 ft

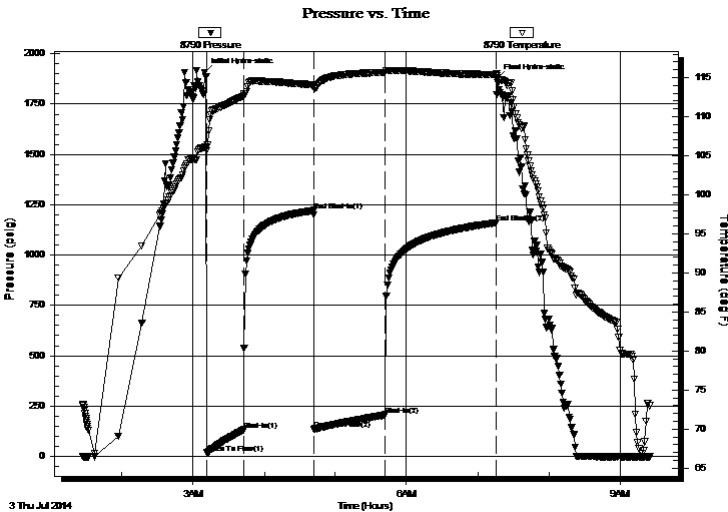
## Serial #: 8790

Inside

Press@RunDepth: 206.10 psig @ 3761.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.07.03 End Date: 2014.07.03 Last Calib.: 2014.07.03  
 Start Time: 01:26:50 End Time: 09:25:29 Time On Btm: 2014.07.03 @ 03:10:00  
 Time Off Btm: 2014.07.03 @ 07:16:30

TEST COMMENT: IF: Good blow . surf. - 9"  
 IS: No blow  
 FF: Good blow . surf. - 8"  
 FS: No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1906.22	106.18	Initial Hydro-static
2	17.98	105.60	Open To Flow (1)
33	131.34	112.63	Shut-In(1)
92	1221.63	114.04	End Shut-In(1)
93	134.29	113.64	Open To Flow (2)
152	206.10	115.66	Shut-In(2)
246	1160.31	115.35	End Shut-In(2)
247	1877.73	115.28	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	OMCW 5%o, 20%m, 75%w	0.30
320.00	OMCW 1%o, 4%m, 95%w	2.51

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (m <sup>3</sup> /d)





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 54151

**DST#: 7**

ATTN: Chuck Schmaltz

Test Start: 2014.07.03 @ 01:26:45

## Tool Information

Drill Pipe:	Length: 3487.00 ft	Diameter: 3.80 inches	Volume: 48.91 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 277.00 ft	Diameter: 2.25 inches	Volume: 1.36 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 50.27 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 69000.00 lb
Depth to Top Packer:	3760.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	37.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3734.00	
Shut In Tool	5.00			3739.00	
Hydraulic tool	5.00			3744.00	
Jars	5.00			3749.00	
Safety Joint	2.00			3751.00	
Packer	5.00			3756.00	27.00 Bottom Of Top Packer
Packer	4.00			3760.00	
Stubb	1.00			3761.00	
Recorder	0.00	8790	Inside	3761.00	
Recorder	0.00	8792	Outside	3761.00	
Perforations	6.00			3767.00	
Bullnose	3.00			3770.00	10.00 Bottom Packers & Anchor

**Total Tool Length: 37.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co., Inc.

**24-23s-12w Stafford,KS**

250 N. Water Ste. 300  
Wichita, KS 67202-1216

**JTT #1-24**

Job Ticket: 54151

**DST#: 7**

ATTN: Chuck Schmaltz

Test Start: 2014.07.03 @ 01:26:45

## 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:

27000 ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8200.00 ppm

Filter Cake: 0.02 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	OMCW 5%o, 20%m, 75%w	0.295
320.00	OMCW 1%o, 4%m, 95%w	2.512

Total Length: 380.00 ft

Total Volume: 2.807 bbl

Num Fluid Samples: 0

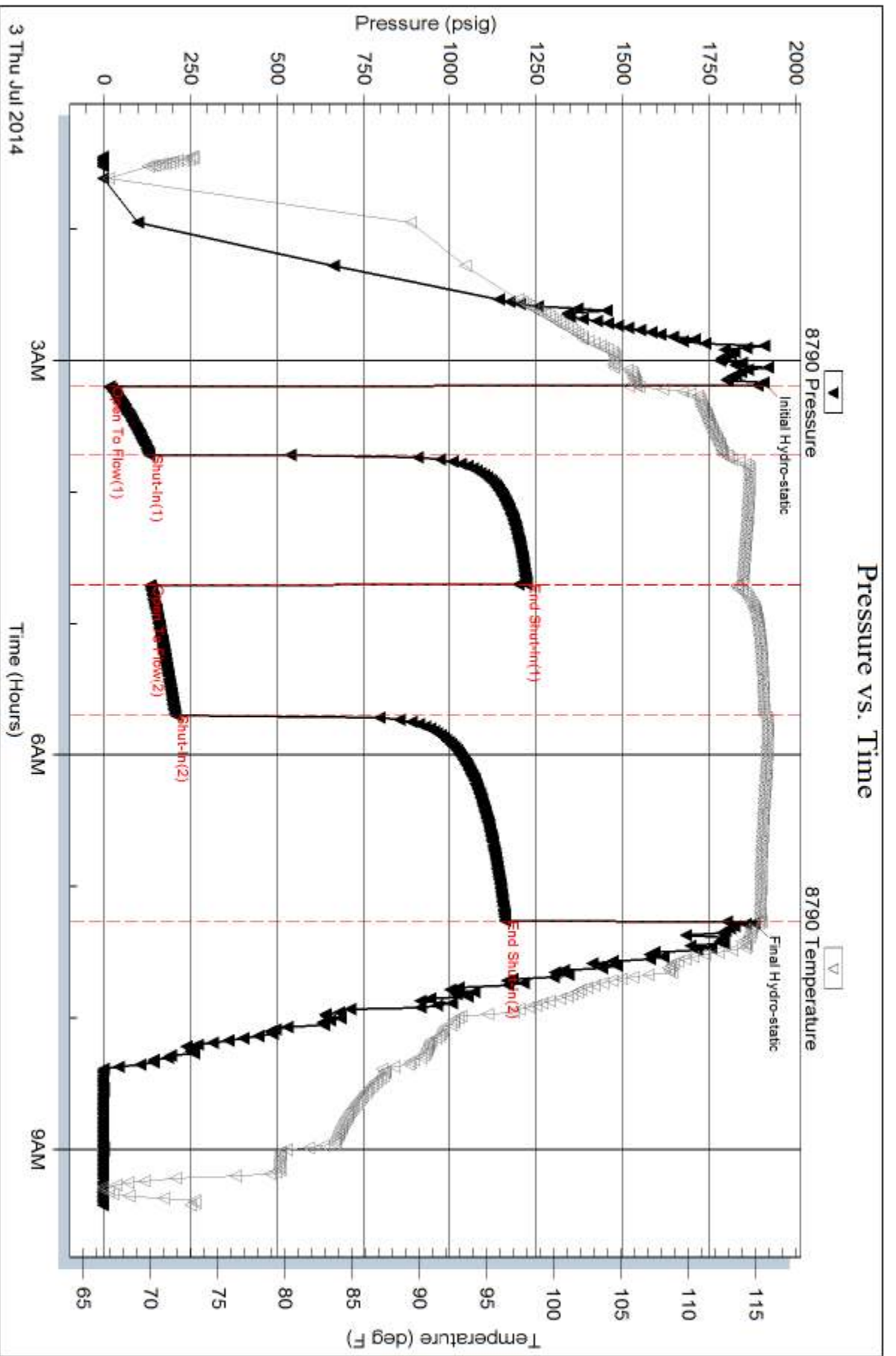
Num Gas Bombs: 0

Serial #: none

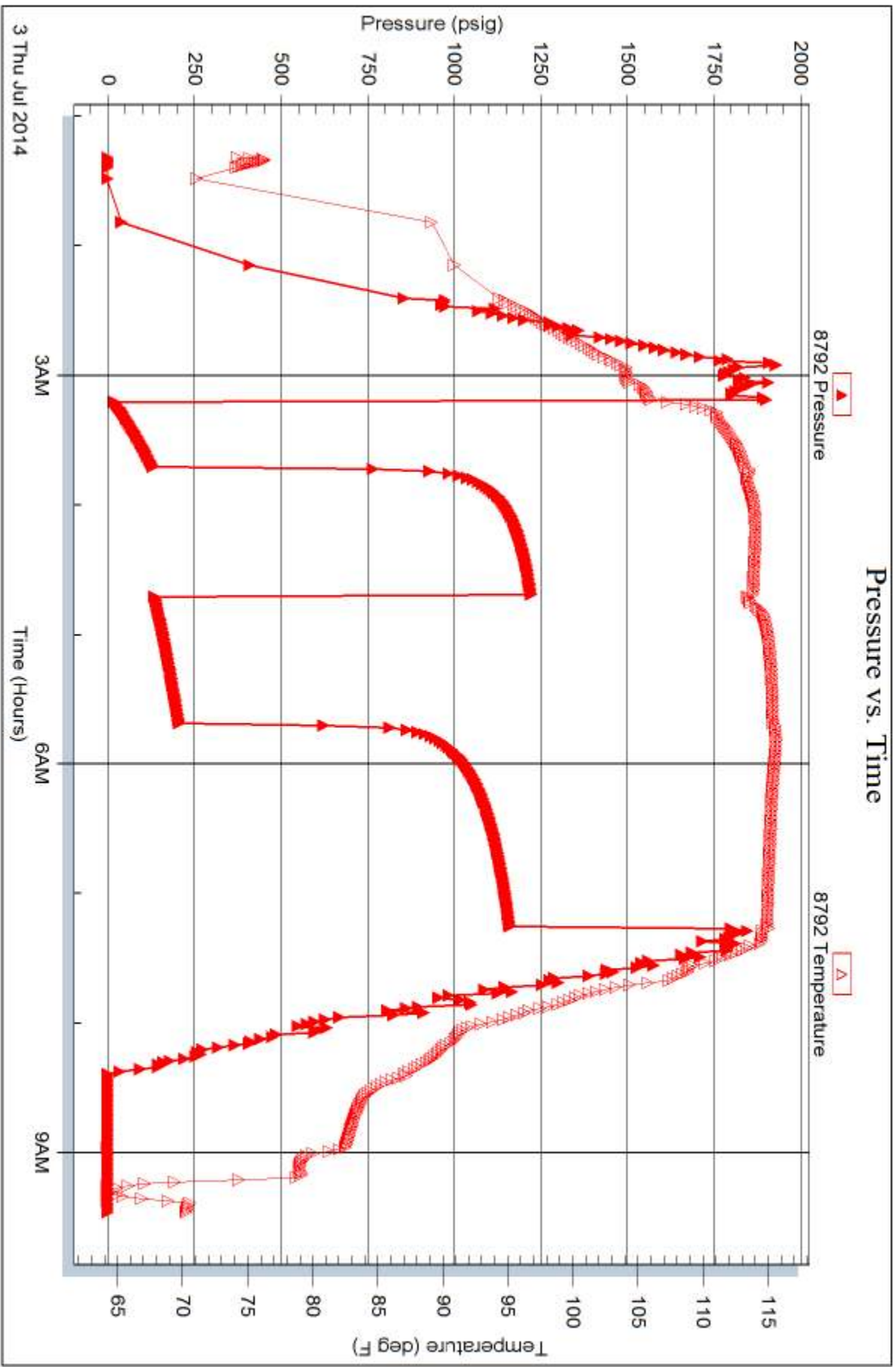
Laboratory Name:

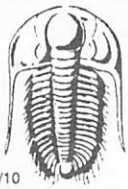
Laboratory Location:

Recovery Comments:









# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51995

4/10

Well Name & No. JTT 1-24 Test No. 1 Date 6-28-14  
 Company Murfin Drilling Co., Inc. Elevation 1857 KB 1846 GL  
 Address 250 N. Water Ste., 300 Wichita, KS 67202-1216  
 Co. Rep / Geo. Chuck Schmatz Rig Murfin 21  
 Location: Sec. 24 Twp. 23s. Rge. 12w. Co. Stafford State KS

Interval Tested 3372-3442 Zone Tested Lans.  
 Anchor Length 70' Drill Pipe Run 3081 Mud Wt. 9.3  
 Top Packer Depth 3367 Drill Collars Run 277 Vis 52  
 Bottom Packer Depth 3372 Wt. Pipe Run Ø WL 8.4  
 Total Depth 3442 Chlorides 4800 ppm System LCM 1/2#  
 Blow Description IF: Strong blow. BoB @ 12 min. ISI: No blow  
FF: Weak blow. 2" - surf. FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>310</u>	<u>GIP</u>				
<u>80</u>	<u>60cm</u>	<u>13</u>	<u>2</u>	<u>85</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 390 BHT 109 Gravity n/c API RW n/c @ n/c °F Chlorides 4800 ppm  
 (A) Initial Hydrostatic 1729  Test 1150 T-On Location 1915  
 (B) First Initial Flow 27  Jars 250 T-Started 2132  
 (C) First Final Flow 32  Safety Joint 75 T-Open 2341  
 (D) Initial Shut-In 619  Circ Sub \_\_\_\_\_ T-Pulled 0341  
 (E) Second Initial Flow 37  Hourly Standby 1 1/4 T-Out 0531  
 (F) Second Final Flow 53  Mileage 66 102.30 Comments \_\_\_\_\_  
 (G) Final Shut-In 795  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1578  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1577.30

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

Sub Total 0  
 Total 1577.30  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Bryan Reynolds  
 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. 51996

Well Name & No. JTT 1-24 Test No. 2 Date 6-29-14  
 Company Murfin Drlg. Co., Inc. Elevation 1857 KB 1846 GL  
 Address 250 N. Water Ste. 300 Wichita, KS 67202-1216  
 Co. Rep / Geo. Chuck Schmaltz Rig Murfin 21  
 Location: Sec. 24 Twp. 23s Rge. 12w Co. Stafford State KS

Interval Tested 3482-3524 Zone Tested Lans. A-I  
 Anchor Length 42 Drill Pipe Run 3205 Mud Wt. 9.2  
 Top Packer Depth 3477 Drill Collars Run 277 Vis 56  
 Bottom Packer Depth 3482 Wt. Pipe Run Ø WL 8.8  
 Total Depth 3524 Chlorides 5800 ppm System LCM 1#  
 Blow Description IF: Weak blow surf. - 3" ISI: No blow  
FF: Weak blow surf. - 2" FST: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>GIF</u>				
<u>60</u>	<u>SLI owcm</u>		<u>1</u>	<u>19</u>	<u>80</u>
<u>120</u>	<u>MCW</u>			<u>95</u>	<u>5</u>

Rec Total 180 BHT 110 Gravity N/C API RW 46 @ 85° F Chlorides 78000 ppm  
 (A) Initial Hydrostatic 1744  Test 1150 .08 On Location 1515  
 (B) First Initial Flow 18  Jars 250 T-Started 1531  
 (C) First Final Flow 52  Safety Joint 75 T-Open 1704  
 (D) Initial Shut-In 1021  Circ Sub \_\_\_\_\_ T-Pulled 2104  
 (E) Second Initial Flow 60  Hourly Standby \_\_\_\_\_ T-Out 2303  
 (F) Second Final Flow 102  Mileage 66 102.30 Comments \_\_\_\_\_  
 (G) Final Shut-In 983  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1727  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 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 1577.30  
 Total 1577.30  
 MP/DST Disc't \_\_\_\_\_  
 Approved By \_\_\_\_\_ Our Representative Ryan Reynolds

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51997

Well Name & No. JTT 1-24 Test No. 3 Date 6-30-14  
 Company Murfin Drilg Co., Inc Elevation 1857 KB 1846 GL  
 Address 250 N. Water Ste. 300 Wichita, KS 67202-1216  
 Co. Rep / Geo. Chuck Schmalz Rig Murfin 21  
 Location: Sec. 24 Twp. 23s Rge. 12w Co. Stafford State KS

Interval Tested 3525 - 3610 Zone Tested Lans. "J-L"  
 Anchor Length 85 Drill Pipe Run 3236 Mud Wt. 9.2  
 Top Packer Depth 3520 Drill Collars Run 277 Vis 56  
 Bottom Packer Depth 3525 Wt. Pipe Run Ø WL 8.8  
 Total Depth 3610 Chlorides 5200 ppm System LCM 1#  
 Blow Description IF: Strong blow. BOB @ 3 1/2 min. ISI: No blow  
FF: Good blow. 1-9" FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>GIP</u>				
<u>1245</u>	<u>GMCW</u>	<u>2</u>	<u>95</u>	<u>3</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1290 BHT 111 Gravity N/C API RW .075 @ 98 °F Chlorides 76<sup>000</sup> ppm

(A) Initial Hydrostatic <u>1782</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1000</u>
(B) First Initial Flow <u>71</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1012</u>
(C) First Final Flow <u>361</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1221</u>
(D) Initial Shut-In <u>1053</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1621</u>
(E) Second Initial Flow <u>371</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1827</u>
(F) Second Final Flow <u>611</u>	<input checked="" type="checkbox"/> Mileage <u>66</u> <u>102.30</u>	Comments
(G) Final Shut-In <u>1018</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1751</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Total <u>1577.30</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1577.30</u>	

Approved By \_\_\_\_\_ Our Representative Ryan Reynolds

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. 51998

Well Name & No. JTT 1-24 Test No. 4 Date 7-1-14  
 Company Murfin Drkg. Co., Inc. Elevation 1857 KB 1846 GL  
 Address 250 N. Water Ste. 300 Wichita, KS 67202-1216  
 Co. Rep / Geo. Chuck Schmalz Rig Murfin 21  
 Location: Sec. 24 Twp. 23s Rge. 12w Co. Stafford State KS

Interval Tested 3605-3690 Zone Tested Viola  
 Anchor Length 85 Drill Pipe Run 3330 Mud Wt. 9.5  
 Top Packer Depth 3600 Drill Collars Run 277 Vis 59  
 Bottom Packer Depth 3605 Wt. Pipe Run Ø WL 9.2  
 Total Depth 3690 Chlorides 6700 ppm System LCM 2#  
 Blow Description IF: Weak blow surf. - 1" IST: No blow  
FF: Weak blow surf. - 2" FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>65</u>	<u>OGM</u>	<u>3</u>		<u>95</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 65 BHT 110 Gravity n/c API RW n/c @ n/c °F Chlorides 6700 ppm  
 (A) Initial Hydrostatic 1816  Test 1150 T-On Location 0145  
 (B) First Initial Flow 22  Jars 250 T-Started 0158  
 (C) First Final Flow 35  Safety Joint 75 T-Open 0352  
 (D) Initial Shut-In 501  Circ Sub \_\_\_\_\_ T-Pulled 0753  
 (E) Second Initial Flow 41  Hourly Standby \_\_\_\_\_ T-Out 1002  
 (F) Second Final Flow 48  Mileage 66 102.30 Comments \_\_\_\_\_  
 (G) Final Shut-In 505  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1802  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Initial Open 30  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Ruined Packer \_\_\_\_\_  
 Final Flow 60  Extra Copies \_\_\_\_\_  
 Final Shut-In 90 Sub Total 0  
 Total 1577.30  
 Sub Total 1577.30 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_

Our Representative Ryan Reynolds

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51999

Well Name & No. JTT 1-24 Test No. 5 Date 7-1-14  
 Company Murfin Drilling Co., Inc. Elevation 1857 KB 1846 GL  
 Address 250 N. Water Ste. 300 Wichita KS 67202-1216  
 Co. Rep / Geo. Chuck Schmaltz Rig Murfin 21  
 Location: Sec. 24 Twp. 23s Rge. 12w Co. Stafford State KS

Interval Tested 3680 - 3750 Zone Tested Arbuckle  
 Anchor Length 70 Drill Pipe Run 3393 Mud Wt. 9.4+  
 Top Packer Depth 3675 Drill Collars Run 277 Vis 65  
 Bottom Packer Depth 3680 Wt. Pipe Run Ø WL 8.4  
 Total Depth 3750 Chlorides 6400 ppm System LCM 2#

Blow Description IF: Strong blow. BoB @ 4min. ISI: Weak  
Surf. blow  
FF: Strong blow. BoB @ 4min. FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1660</u>	<u>Clean gassy Oil</u>	<u>10</u>	<u>90</u>		
	<u>(occ. spots of mud in keg)</u>				

Rec Total 1660 BHT 114 Gravity 40 API RW N/C @ N/C °F Chlorides 6400 ppm

(A) Initial Hydrostatic <u>1895</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1630</u>
(B) First Initial Flow <u>97</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1708</u>
(C) First Final Flow <u>318</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1902</u>
(D) Initial Shut-In <u>1275</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>2302</u>
(E) Second Initial Flow <u>366</u>	<input checked="" type="checkbox"/> Hourly Standby <u>1 1/4</u> 0.5h 50	T-Out <u>0251</u>
(F) Second Final Flow <u>625</u>	<input checked="" type="checkbox"/> Mileage <u>660</u> 102.30	Comments
(G) Final Shut-In <u>1280</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1826</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 30  Shale Packer 1 1/4  Ruined Packer  
 Initial Shut-In 60  Extra Packer  Extra Copies  
 Final Flow 60  Extra Recorder  Sub Total 0  
 Final Shut-In 90  Day Standby  Total 1627.30  
 Accessibility  MP/DST Disc't  
 Sub Total 1627.30

Approved By \_\_\_\_\_ Our Representative Ryan Reynolds  
 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. 52000

Well Name & No. JTT 1-24 Test No. 6 Date 7-2-14  
 Company Murfin Drilg Co., Inc. Elevation 1857 KB 1846 GL  
 Address 250 N. Water Ste. 300 Wichita, KS 67202-1216  
 Co. Rep / Geo. Chuck Schmalz Rig Murfin 21  
 Location: Sec. 24 Twp. 23s Rge. 12w Co. Stafford State KS

Interval Tested 3750-3760 Zone Tested Arbuckle  
 Anchor Length 10 Drill Pipe Run 3456 Mud Wt. 9.4+  
 Top Packer Depth 3745 Drill Collars Run 277 Vis 65  
 Bottom Packer Depth 3750 Wt. Pipe Run Ø WL 8.4  
 Total Depth 3760 Chlorides 6400 ppm System LCM 2#

Blow Description IF: Strong blow. BOB @ 3 min.  
ISI: Weak drying surf. blow.  
FF: Strong blow. BOB @ 5 min. FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>GIP</u>				
<u>1925</u>	<u>Clean gassy Oil</u>	<u>15</u>	<u>85</u>		
<u>120</u>	<u>GMWCOL</u>	<u>10</u>	<u>45</u>	<u>25</u>	<u>20</u>

Rec Total 2105 BHT 116 Gravity 40 API RW 25 @ 80 °F Chlorides 24000 ppm

(A) Initial Hydrostatic <u>1940</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>0930</u>
(B) First Initial Flow <u>137</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0938</u>
(C) First Final Flow <u>379</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1138</u>
(D) Initial Shut-In <u>1290</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1539</u>
(E) Second Initial Flow <u>374</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1839</u>
(F) Second Final Flow <u>701</u>	<input checked="" type="checkbox"/> Mileage <u>66</u> <u>102.30</u>	Comments
(G) Final Shut-In <u>1294</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1892</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>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1577.30</u>
	Sub Total <u>1577.30</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative \_\_\_\_\_

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 54151

Well Name & No. JTT 1-24 Test No. 7 Date 7-3-14  
 Company Murfin Drilg Co., Inc. Elevation 1857 KB 1846 GL  
 Address 250 N. Water Ste. 300 Wichita, KS 67202-1216  
 Co. Rep / Geo. Chuck Schmaltz Rig Murfin 21  
 Location: Sec. 24 Twp. 23s Rge. 12w Co. Stafford State KS

Interval Tested 3760 - 3770 Zone Tested Arbuckle  
 Anchor Length 10 Drill Pipe Run 3487 Mud Wt. 9.5+  
 Top Packer Depth 3765 Drill Collars Run 277 Vis 69  
 Bottom Packer Depth 3760 Wt. Pipe Run 0 WL 9.6  
 Total Depth 3770 Chlorides 8200 ppm System LCM 1#  
 Blow Description IF: Good blow, surf. -9" IST: No blow.  
FF: Good blow, surf. -8" FST: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>DMCW</u>	<u>5</u>	<u>75</u>	<u>20</u>	
<u>320</u>	<u>DMCW</u>	<u>1</u>	<u>95</u>	<u>4</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 380 BHT 115 Gravity N/C API RW 26 @ 70 °F Chlorides 27000 ppm  
 Test 1150 T-On Location 0115  
 Jars 250 T-Started 0127  
 Safety Joint 75 T-Open 0311  
 Circ Sub \_\_\_\_\_ T-Pulled 0711  
 Hourly Standby \_\_\_\_\_ T-Out 0926  
 Mileage 66 102.30 Comments \_\_\_\_\_  
 Sampler \_\_\_\_\_  
 Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1577.30

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

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