



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling CO INC**

250 N Water STE 300
Wichita KS 67202

ATTN: Rocky Milford

Jean #4-8

8-1s-37w Cheyenne,KS

Start Date: 2014.06.27 @ 01:25:00

End Date: 2014.06.27 @ 09:20:30

Job Ticket #: 53691 DST #: 1

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

Printed: 2014.07.07 @ 10:00:59



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling CO INC
 250 N Water STE 300
 Wichita KS 67202
 ATTN: Rocky Milford

8-1s-37w Cheyenne,KS

Jean #4-8

Job Ticket: 53691

DST#: 1

Test Start: 2014.06.27 @ 01:25:00

GENERAL INFORMATION:

Formation: **Stotler**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:12:00
 Time Test Ended: 09:20:30
 Interval: **3781.00 ft (KB) To 3955.00 ft (KB) (TVD)**
 Total Depth: 3955.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Robert Zodrow
 Unit No: 66
 Reference Elevations: 3216.00 ft (KB)
 3211.00 ft (CF)
 KB to GR/CF: 5.00 ft

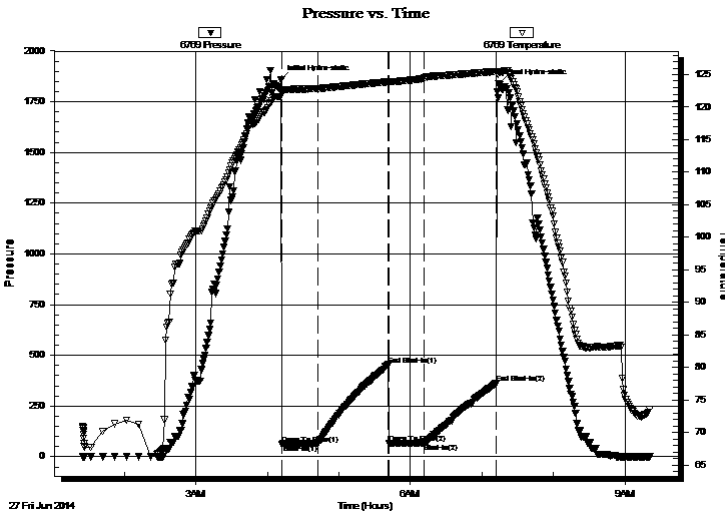
Serial #: 6769

Outside

Press@RunDepth: 67.41 psig @ 3782.00 ft (KB)
 Start Date: 2014.06.27 End Date: 2014.06.27
 Start Time: 01:25:05 End Time: 09:20:29
 Capacity: 8000.00 psig
 Last Calib.: 2014.06.27
 Time On Btm: 2014.06.27 @ 04:11:30
 Time Off Btm: 2014.06.27 @ 07:14:00

TEST COMMENT: 30-IF- Blow built to 3/4"
 60-ISI- No return
 30-FF- No blow
 60-FSI- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1858.68	121.64	Initial Hydro-static
1	62.79	122.20	Open To Flow (1)
31	62.64	122.84	Shut-In(1)
90	453.92	123.90	End Shut-In(1)
91	65.28	123.85	Open To Flow (2)
120	67.41	124.51	Shut-In(2)
181	361.83	125.49	End Shut-In(2)
183	1838.64	125.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	mud 100%m	0.34

Gas Rates

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



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DRILL STEM TEST REPORT

Murfin Drilling CO INC
250 N Water STE 300
Wichita KS 67202
ATTN: Rocky Milford

8-1s-37w Cheyenne,KS

Jean #4-8

Job Ticket: 53691

DST#: 1

Test Start: 2014.06.27 @ 01:25:00

GENERAL INFORMATION:

Formation: **Stotler**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:12:00

Time Test Ended: 09:20:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Robert Zodrow

Unit No: 66

Interval: 3781.00 ft (KB) To 3955.00 ft (KB) (TVD)

Reference Elevations: 3216.00 ft (KB)

Total Depth: 3955.00 ft (KB) (TVD)

3211.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8521 Inside

Press@RunDepth: psig @ 3782.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.27 End Date: 2014.06.27

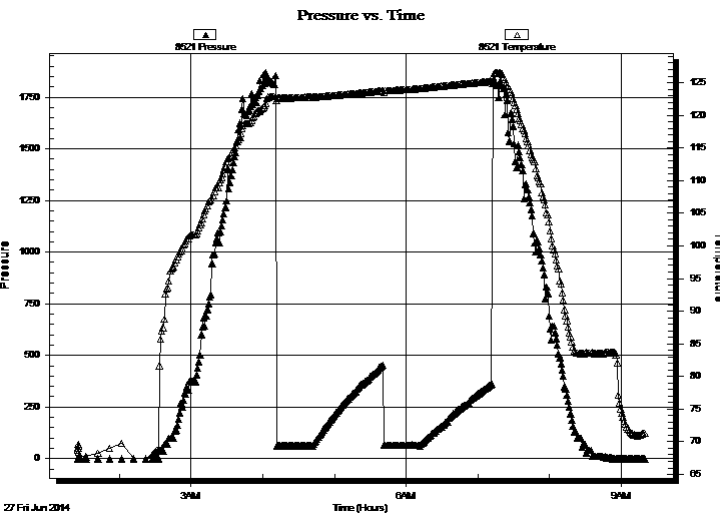
Last Calib.: 2014.06.27

Start Time: 01:25:05 End Time: 09:19:59

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF- Blow built to 3/4"
60-ISI- No return
30-FF- No blow
60-FSI- No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	mud 100%m	0.34

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling CO INC
250 N Water STE 300
Wichita KS 67202
ATTN: Rocky Milford

8-1s-37w Cheyenne,KS
Jean #4-8
Job Ticket: 53691 **DST#: 1**
Test Start: 2014.06.27 @ 01:25:00

Tool Information

Drill Pipe:	Length: 3592.00 ft	Diameter: 3.88 inches	Volume: 52.53 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 68000.00 lb
			<u>Total Volume: 53.44 bbl</u>	Tool Chased 6.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3781.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	174.00 ft			
Tool Length:	202.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3754.00	
Shut In Tool	5.00			3759.00	
Hydraulic tool	5.00			3764.00	
Jars	5.00			3769.00	
Safety Joint	3.00			3772.00	
Packer	5.00			3777.00	28.00 Bottom Of Top Packer
Packer	4.00			3781.00	
Stubb	1.00			3782.00	
Recorder	0.00	6769	Outside	3782.00	
Recorder	0.00	8521	Inside	3782.00	
Perforations	9.00			3791.00	
Change Over Sub	1.00			3792.00	
Drill Pipe	157.00			3949.00	
Change Over Sub	1.00			3950.00	
Bullnose	5.00			3955.00	174.00 Bottom Packers & Anchor

Total Tool Length: 202.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling CO INC

8-1s-37w Cheyenne,KS

250 N Water STE 300
Wichita KS 67202

Jean #4-8

Job Ticket: 53691

DST#: 1

ATTN: Rocky Milford

Test Start: 2014.06.27 @ 01:25:00

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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	mud 100%m	0.344

Total Length: 70.00 ft Total Volume: 0.344 bbl

Num Fluid Samples: 0

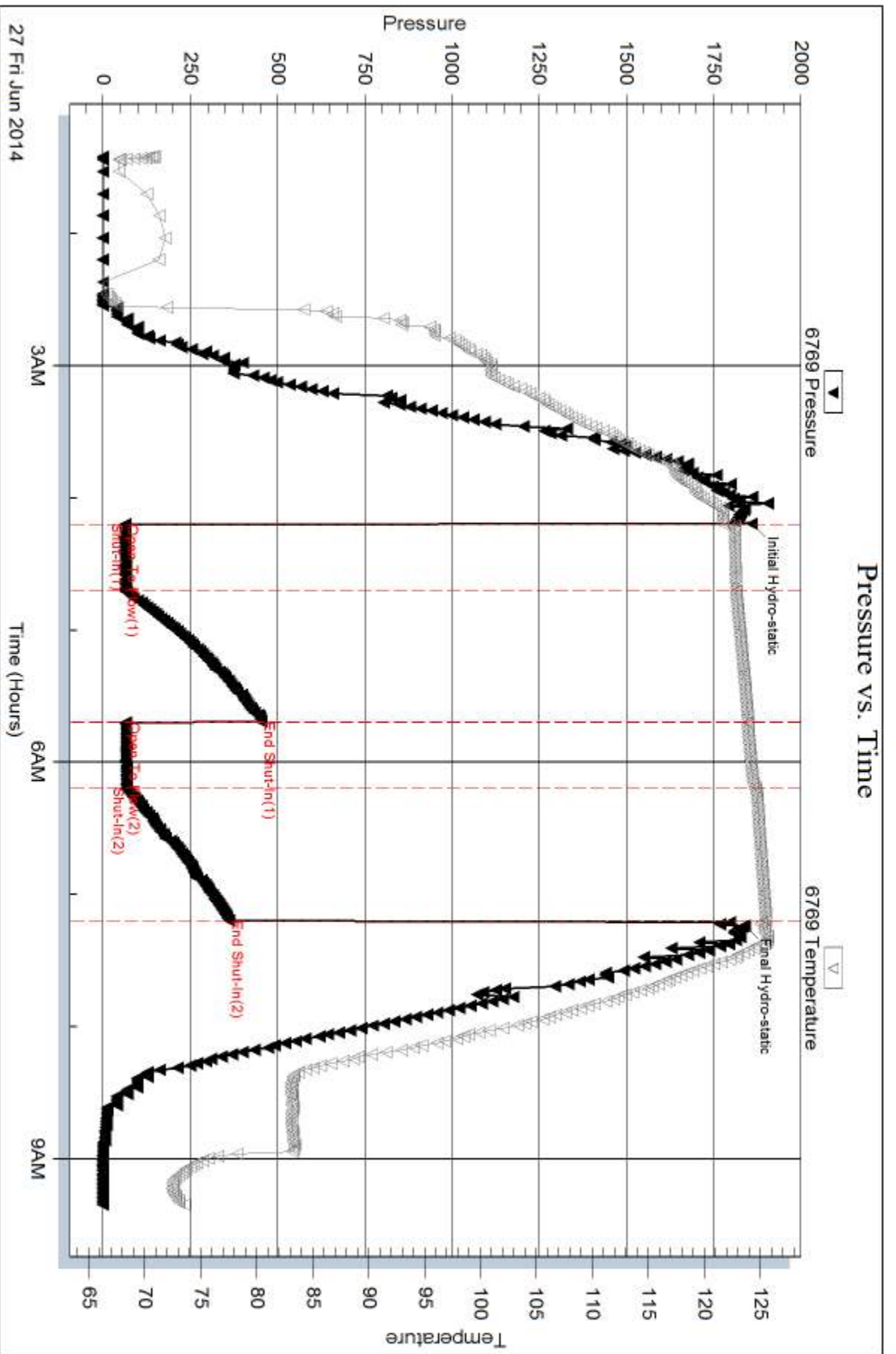
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



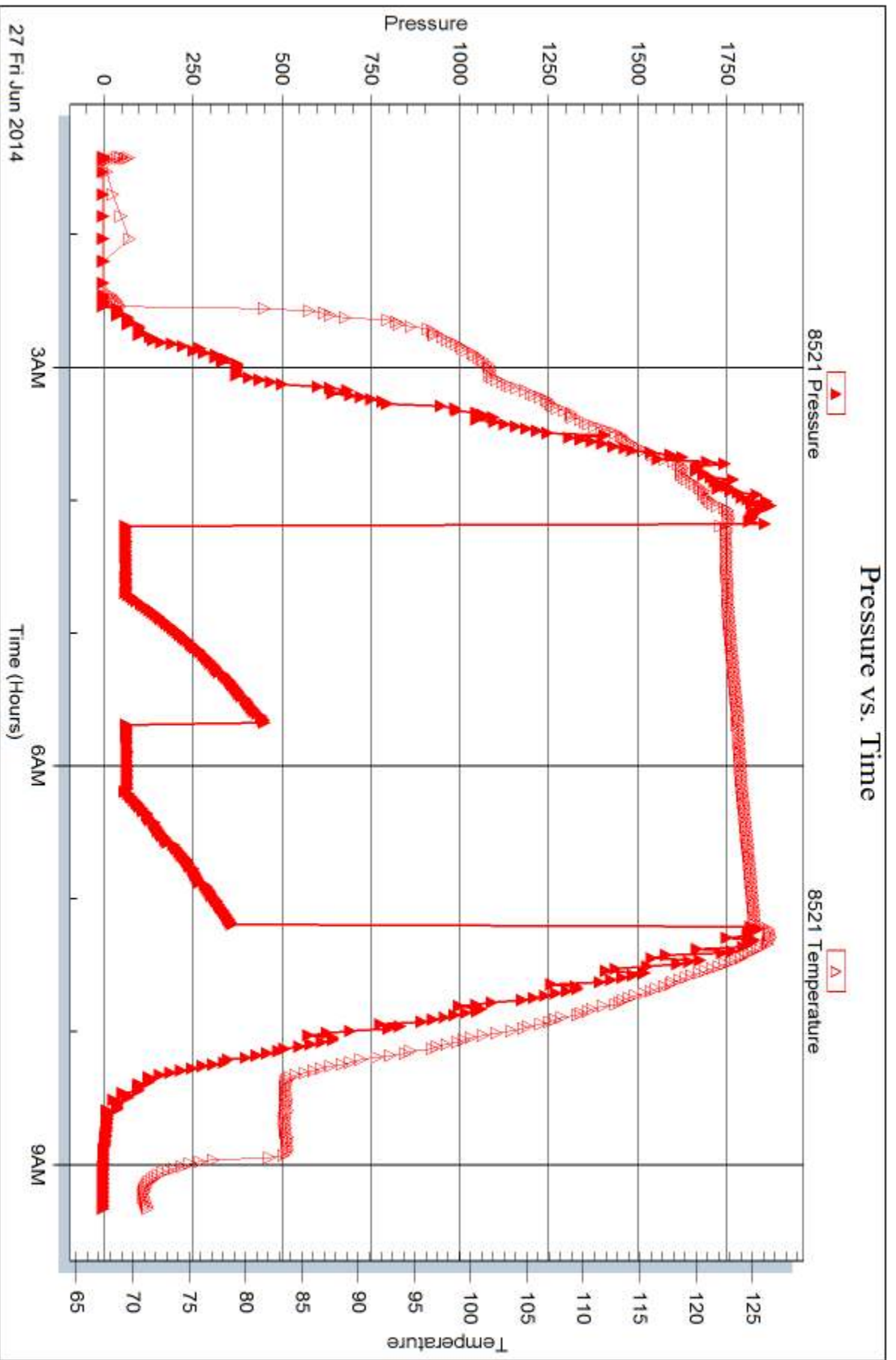
Serial #: 8521

Inside

Murfin Drilling CO INC

Jean #4-8

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling CO INC**

250 N Water STE 300
Wichita KS 67202

ATTN: Rocky Milford

Jean #4-8

8-1s-37w Cheyenne,KS

Start Date: 2014.06.28 @ 12:10:00

End Date: 2014.06.28 @ 21:02:00

Job Ticket #: 53692 DST #: 2

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

Printed: 2014.07.07 @ 10:00:39

Murfin Drilling CO INC
8-1s-37w Cheyenne,KS
Jean #4-8
DST # 2
LKC "A-D"
2014.06.28



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling CO INC
250 N Water STE 300
Wichita KS 67202
ATTN: Rocky Milford

8-1s-37w Cheyenne,KS

Jean #4-8

Job Ticket: 53692

DST#: 2

Test Start: 2014.06.28 @ 12:10:00

GENERAL INFORMATION:

Formation: **LKC "A-D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:37:30
 Time Test Ended: 21:02:00
 Interval: **4120.00 ft (KB) To 4242.00 ft (KB) (TVD)**
 Total Depth: 4242.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Robert Zodrow
 Unit No: 66
 Reference Elevations: 3216.00 ft (KB)
 3211.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 6769

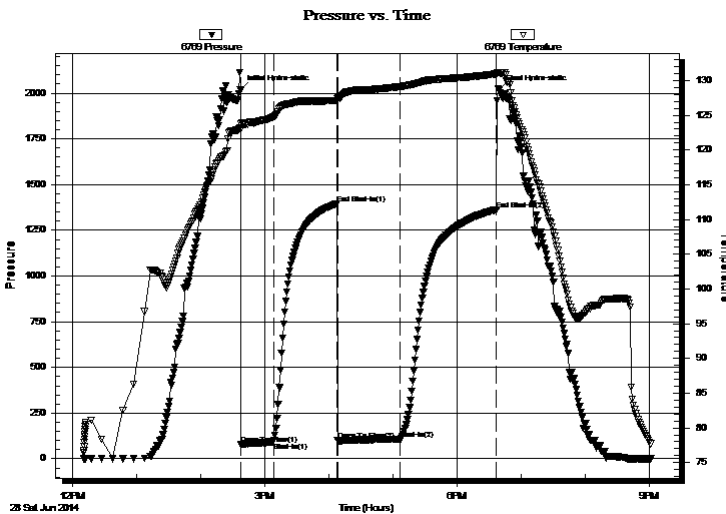
Outside

Press@RunDepth: 106.89 psig @ 4121.00 ft (KB)
 Start Date: 2014.06.28 End Date: 2014.06.28
 Start Time: 12:10:05 End Time: 21:02:00

Capacity: 8000.00 psig
 Last Calib.: 2014.06.28
 Time On Btm: 2014.06.28 @ 14:37:00
 Time Off Btm: 2014.06.28 @ 18:39:30

TEST COMMENT: 30-IF- Blow built to 2"
 60-ISI- No return
 30-FF- Blow built to 4 1/2"
 60-FSI- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2017.82	122.98	Initial Hydro-static
1	77.69	123.75	Open To Flow (1)
31	92.76	124.77	Shut-In(1)
91	1396.19	127.13	End Shut-In(1)
91	99.56	127.44	Open To Flow (2)
150	106.89	129.14	Shut-In(2)
240	1362.72	130.95	End Shut-In(2)
243	2017.50	131.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
205.00	gmco 10%g 40%m 50%o	1.20

Gas Rates

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

* Recovery from multiple tests



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DRILL STEM TEST REPORT

Murfin Drilling CO INC
250 N Water STE 300
Wichita KS 67202
ATTN: Rocky Milford

8-1s-37w Cheyenne,KS

Jean #4-8

Job Ticket: 53692

DST#: 2

Test Start: 2014.06.28 @ 12:10:00

GENERAL INFORMATION:

Formation: **LKC "A-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:37:30

Time Test Ended: 21:02:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 66

Interval: 4120.00 ft (KB) To 4242.00 ft (KB) (TVD)

Reference Elevations: 3216.00 ft (KB)

Total Depth: 4242.00 ft (KB) (TVD)

3211.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8521

Inside

Press@RunDepth: psig @ 4121.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.28

End Date:

2014.06.28

Last Calib.:

2014.06.28

Start Time: 12:10:05

End Time:

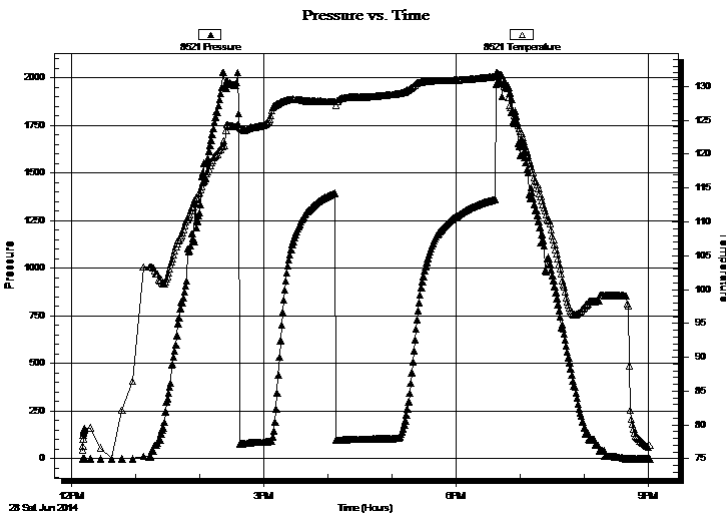
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Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF- Blow built to 2"
60-ISI- No return
30-FF- Blow built to 4 1/2"
60-FSI- No return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
205.00	gmco 10%g 40%m 50%o	1.20

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling CO INC

8-1s-37w Cheyenne,KS

250 N Water STE 300
Wichita KS 67202

Jean #4-8

Job Ticket: 53692

DST#: 2

ATTN: Rocky Milford

Test Start: 2014.06.28 @ 12:10:00

Tool Information

Drill Pipe:	Length: 3941.00 ft	Diameter: 3.88 inches	Volume: 57.63 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 58.54 bbl</u>	Tool Chased 8.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4120.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	122.00 ft			
Tool Length:	150.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: took on mud chasing tool to bottom

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4093.00	
Shut In Tool	5.00			4098.00	
Hydraulic tool	5.00			4103.00	
Jars	5.00			4108.00	
Safety Joint	3.00			4111.00	
Packer	5.00			4116.00	28.00 Bottom Of Top Packer
Packer	4.00			4120.00	
Stubb	1.00			4121.00	
Recorder	0.00	6769	Outside	4121.00	
Recorder	0.00	8521	Inside	4121.00	
Perforations	20.00			4141.00	
Change Over Sub	1.00			4142.00	
Drill Pipe	94.00			4236.00	
Change Over Sub	1.00			4237.00	
Bullnose	5.00			4242.00	122.00 Bottom Packers & Anchor

Total Tool Length: 150.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling CO INC

8-1s-37w Cheyenne,KS

250 N Water STE 300
Wichita KS 67202

Jean #4-8

Job Ticket: 53692

DST#: 2

ATTN: Rocky Milford

Test Start: 2014.06.28 @ 12:10:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
205.00	gmco 10%g 40%m 50%o	1.202

Total Length: 205.00 ft Total Volume: 1.202 bbl

Num Fluid Samples: 0

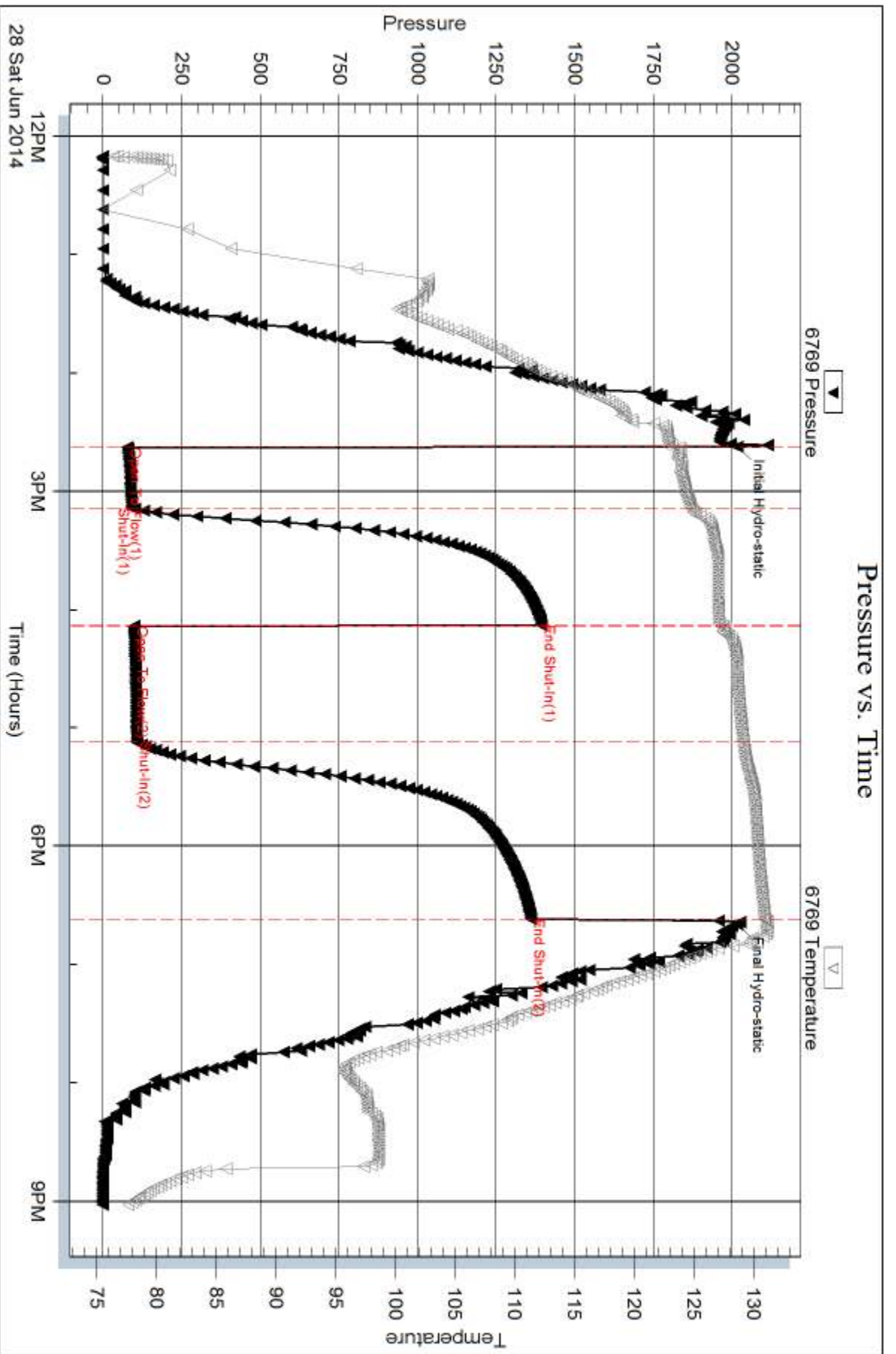
Num Gas Bombs: 0

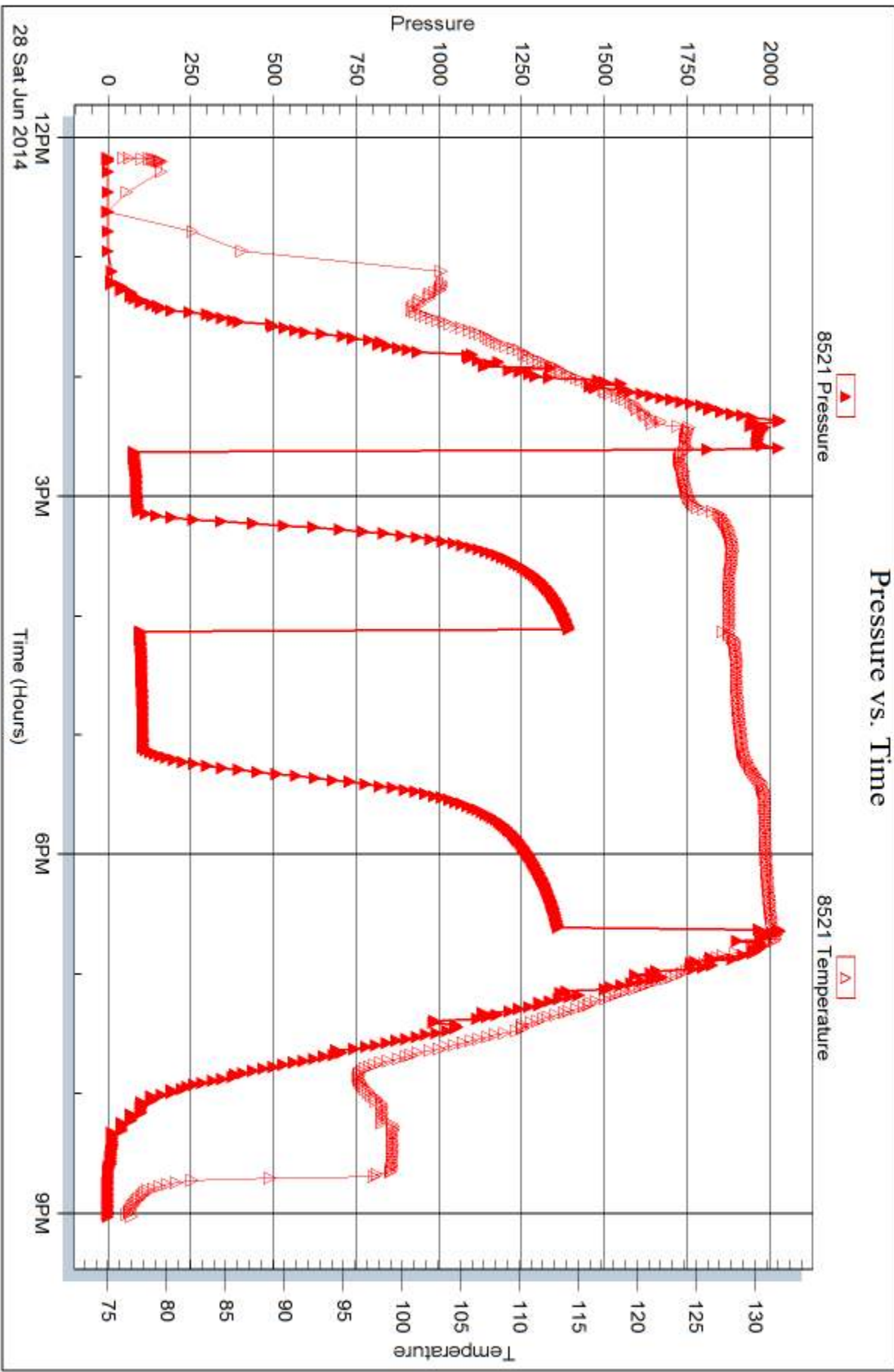
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling CO INC**

250 N Water STE 300
Wichita KS 67202

ATTN: Rocky Milford

Jean #4-8

8-1s-37w Cheyenne,KS

Start Date: 2014.06.29 @ 12:43:00

End Date: 2014.06.29 @ 21:20:30

Job Ticket #: 58232 DST #: 3

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

Printed: 2014.07.07 @ 10:00:15



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling CO INC
250 N Water STE 300
Wichita KS 67202
ATTN: Rocky Milford

8-1s-37w Cheyenne,KS

Jean #4-8

Job Ticket: 58232

DST#: 3

Test Start: 2014.06.29 @ 12:43:00

GENERAL INFORMATION:

Formation: **LKC G-J**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 15:17:30
 Tester: Kevin Mack
 Time Test Ended: 21:20:30
 Unit No: 66
 Interval: **4238.00 ft (KB) To 4386.00 ft (KB) (TVD)**
 Reference Elevations: 3216.00 ft (KB)
 Total Depth: 4386.00 ft (KB) (TVD)
 3211.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 5.00 ft

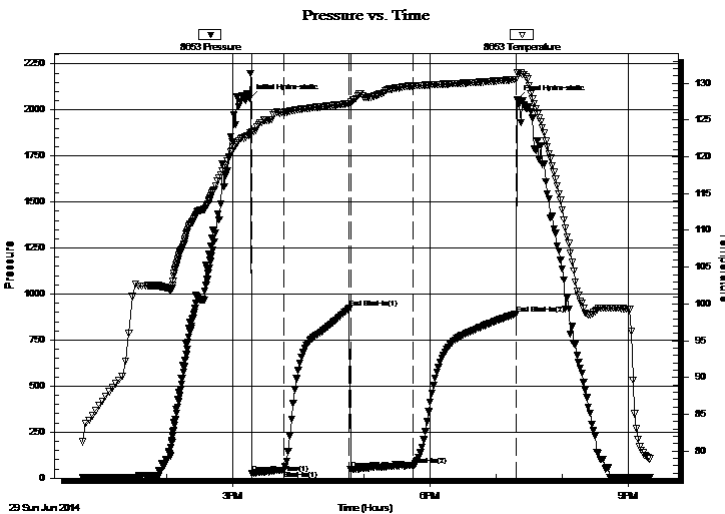
Serial #: 8653

Outside

Press@RunDepth: 69.63 psig @ 4239.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.06.29 End Date: 2014.06.29 Last Calib.: 2014.06.29
 Start Time: 12:44:00 End Time: 21:20:30 Time On Btm: 2014.06.29 @ 15:16:00
 Time Off Btm: 2014.06.29 @ 19:19:00

TEST COMMENT: 30 - IF- 1/4" Blow built to 1 1/4"
 60 - IS- No Return
 60 - FF- Surface Blow started at 10 min. Built to 1/4"
 90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2062.96	122.96	Initial Hydro-static
2	25.33	123.38	Open To Flow (1)
31	42.92	126.00	Shut-In(1)
91	924.71	127.23	End Shut-In(1)
92	48.42	127.24	Open To Flow (2)
148	69.63	129.62	Shut-In(2)
242	890.37	130.50	End Shut-In(2)
243	2054.33	131.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
80.00	OSM 100M (oil spots)	0.39

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling CO INC

8-1s-37w Cheyenne, KS

250 N Water STE 300
Wichita KS 67202

Jean #4-8

Job Ticket: 58232

DST#: 3

ATTN: Rocky Milford

Test Start: 2014.06.29 @ 12:43:00

GENERAL INFORMATION:

Formation: **LKC G-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:17:30

Time Test Ended: 21:20:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4238.00 ft (KB) To 4386.00 ft (KB) (TVD)

Reference Elevations: 3216.00 ft (KB)

Total Depth: 4386.00 ft (KB) (TVD)

3211.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8874

Inside

Press@RunDepth: psig @ 4239.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.29

End Date:

2014.06.29

Last Calib.:

2014.06.29

Start Time: 12:44:00

End Time:

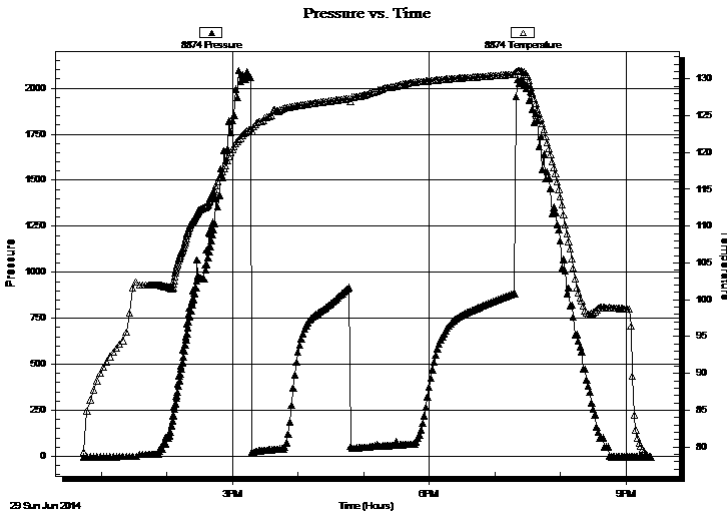
21:22:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- 1/4" Blow built to 1 1/4"
60 - ISI- No Return
60 - FF- Surface Blow started at 10 min. Built to 1/4"
90 - FSI- No Return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
80.00	OSM 100M (oil spots)	0.39

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling CO INC

8-1s-37w Cheyenne,KS

250 N Water STE 300
Wichita KS 67202

Jean #4-8

Job Ticket: 58232

DST#: 3

ATTN: Rocky Milford

Test Start: 2014.06.29 @ 12:43:00

Tool Information

Drill Pipe:	Length: 4040.00 ft	Diameter: 3.80 inches	Volume: 56.67 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 57.58 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4238.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	148.00 ft			
Tool Length:	176.00 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			4211.00	
Shut In Tool	5.00			4216.00	
Hydraulic tool	5.00			4221.00	
Jars	5.00			4226.00	
Safety Joint	3.00			4229.00	
Packer	5.00			4234.00	28.00 Bottom Of Top Packer
Packer	4.00			4238.00	
Packer - Shale	0.00			4238.00	
Stubb	1.00			4239.00	
Recorder	0.00	8653	Outside	4239.00	
Recorder	0.00	8874	Inside	4239.00	
Perforations	15.00			4254.00	
Change Over Sub	1.00			4255.00	
Drill Pipe	125.00			4380.00	
Change Over Sub	1.00			4381.00	
Bullnose	5.00			4386.00	148.00 Bottom Packers & Anchor
Total Tool Length:	176.00				



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TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling CO INC
250 N Water STE 300
Wichita KS 67202
ATTN: Rocky Milford

8-1s-37w Cheyenne,KS
Jean #4-8
Job Ticket: 58232 **DST#: 3**
Test Start: 2014.06.29 @ 12:43:00

Mud and Cushion Information

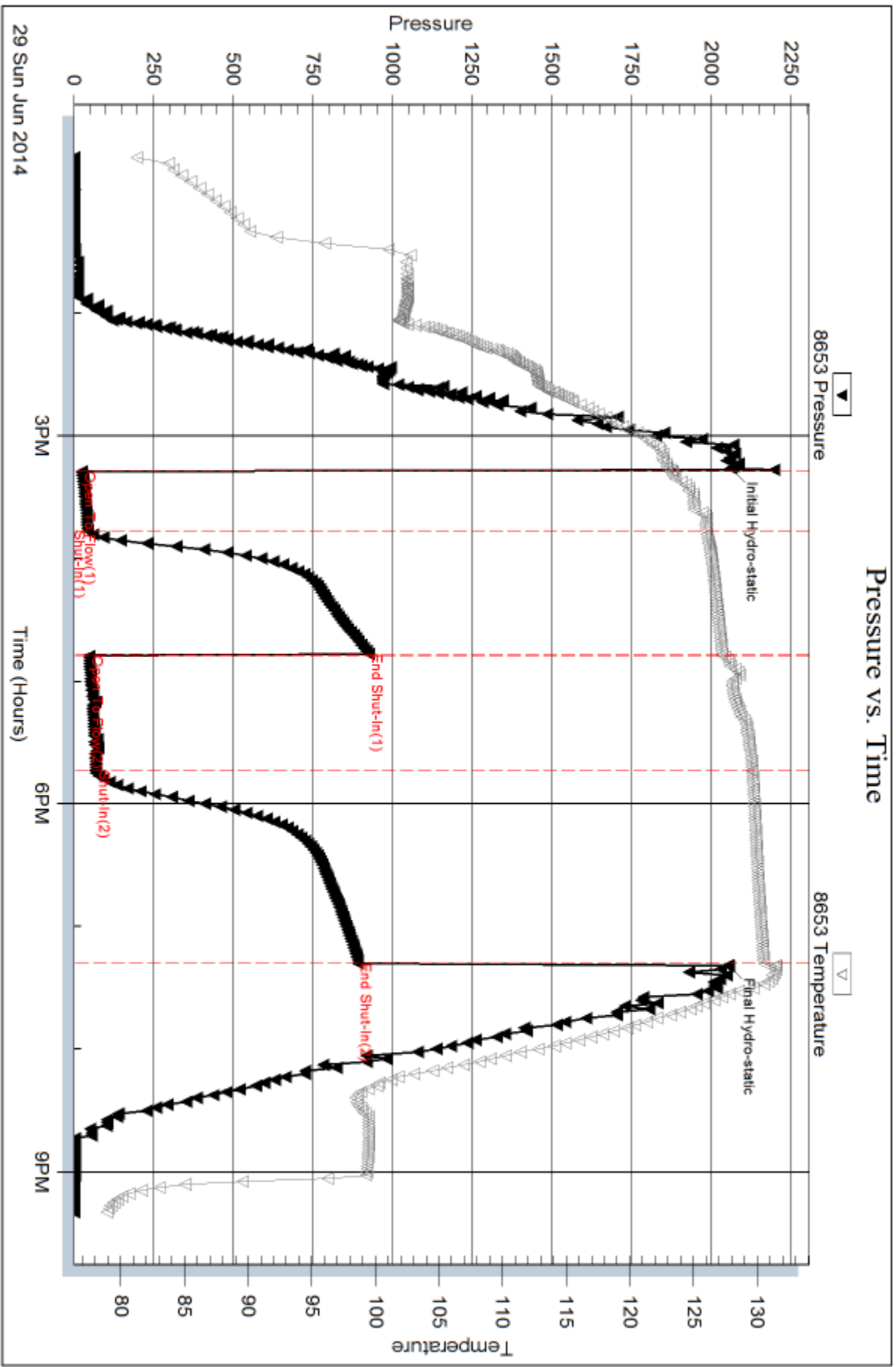
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 60.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.19 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 700.00 ppm			
Filter Cake: 2.00 inches			

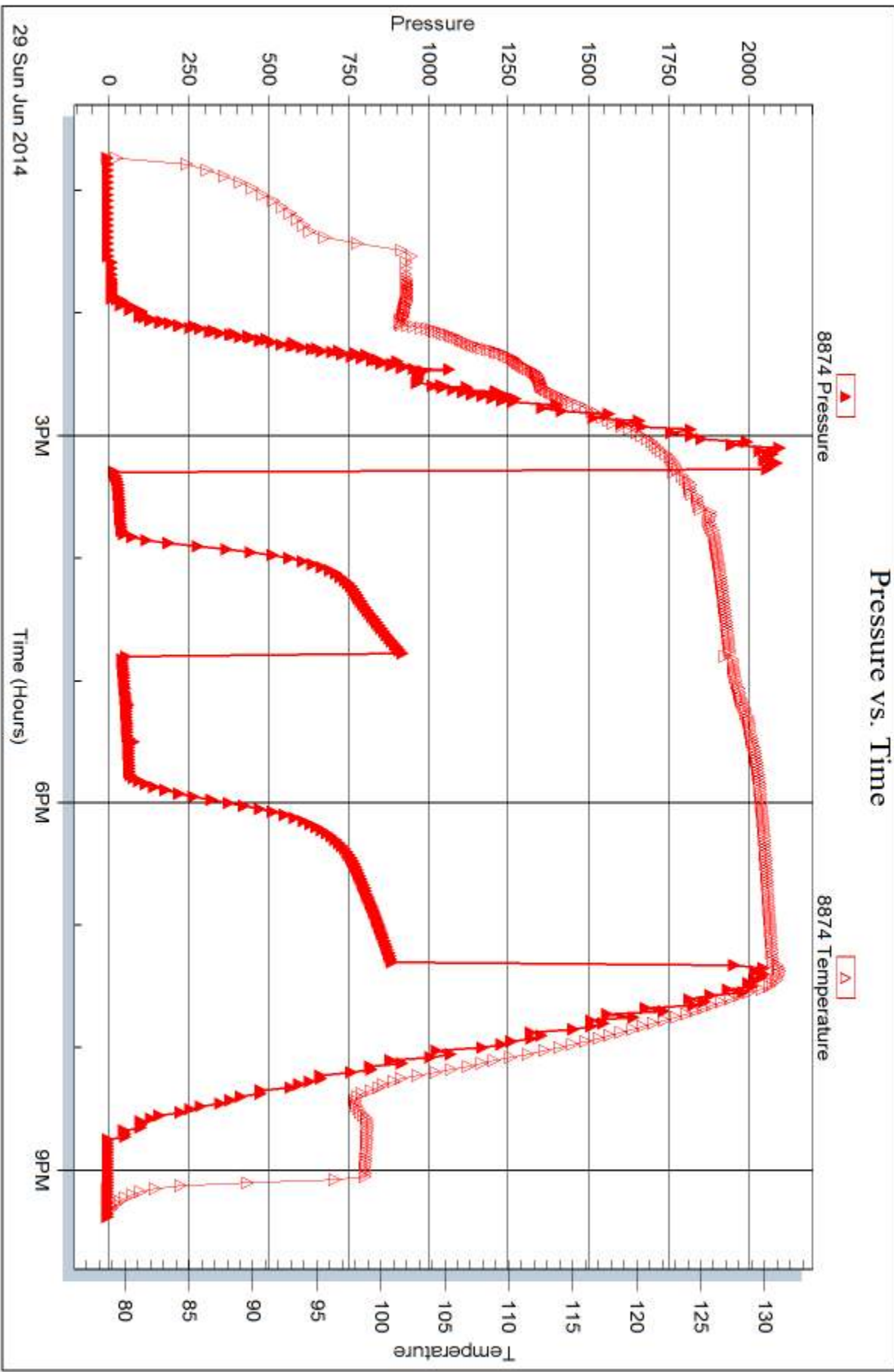
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
80.00	OSM 100M (oil spots)	0.393

Total Length: 80.00 ft Total Volume: 0.393 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling CO INC**

250 N Water STE 300
Wichita KS 67202

ATTN: Rocky Milford

Jean #4-8

8-1s-37w Cheyenne,KS

Start Date: 2014.06.30 @ 06:21:00

End Date: 2014.06.30 @ 15:09:30

Job Ticket #: 58233 DST #: 4

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

Printed: 2014.07.07 @ 09:59:30

Murfin Drilling CO INC
8-1s-37w Cheyenne,KS
Jean #4-8
DST # 4
Pawnee
2014.06.30



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling CO INC
250 N Water STE 300
Wichita KS 67202
ATTN: Rocky Milford

8-1s-37w Cheyenne,KS

Jean #4-8

Job Ticket: 58233

DST#: 4

Test Start: 2014.06.30 @ 06:21:00

GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:24:30
 Time Test Ended: 15:09:30
 Interval: **4535.00 ft (KB) To 4585.00 ft (KB) (TVD)**
 Total Depth: 4585.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Kevin Mack
 Unit No: 66
 Reference Elevations: 3216.00 ft (KB)
 3211.00 ft (CF)
 KB to GR/CF: 5.00 ft

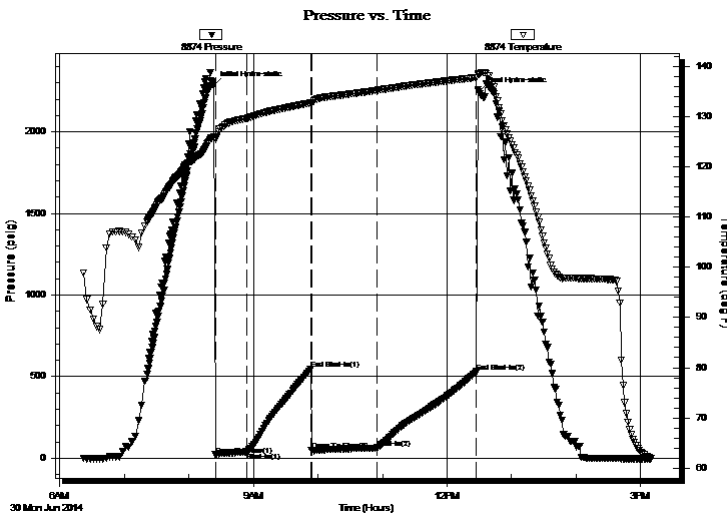
Serial #: 8874

Inside

Press@RunDepth: 62.96 psig @ 4536.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.06.30 End Date: 2014.06.30 Last Calib.: 2014.06.30
 Start Time: 06:22:00 End Time: 15:09:30 Time On Btm: 2014.06.30 @ 08:23:00
 Time Off Btm: 2014.06.30 @ 12:29:30

TEST COMMENT: 30 - IF- 1/4" Blow built to 3"
 60 - IS- No Return
 60 - FF- Surface Blow built 3 1/4"
 90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2282.79	125.99	Initial Hydro-static
2	20.81	125.57	Open To Flow (1)
31	39.32	129.66	Shut-In(1)
90	545.32	132.71	End Shut-In(1)
91	48.35	132.57	Open To Flow (2)
152	62.96	135.22	Shut-In(2)
245	530.45	137.78	End Shut-In(2)
247	2246.35	138.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM 60M 40o	0.30
63.00	Clean Gassy Oil 10G 90o	0.31

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling CO INC

8-1s-37w Cheyenne,KS

250 N Water STE 300
Wichita KS 67202

Jean #4-8

Job Ticket: 58233

DST#: 4

ATTN: Rocky Milford

Test Start: 2014.06.30 @ 06:21:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:24:30

Time Test Ended: 15:09:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: **4535.00 ft (KB) To 4585.00 ft (KB) (TVD)**

Total Depth: 4585.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3216.00 ft (KB)

3211.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8653 Outside

Press@RunDepth: psig @ 4536.00 ft (KB)

Start Date: 2014.06.30

End Date:

2014.06.30

Capacity: 8000.00 psig

Last Calib.:

2014.07.01

Start Time: 06:22:00

End Time:

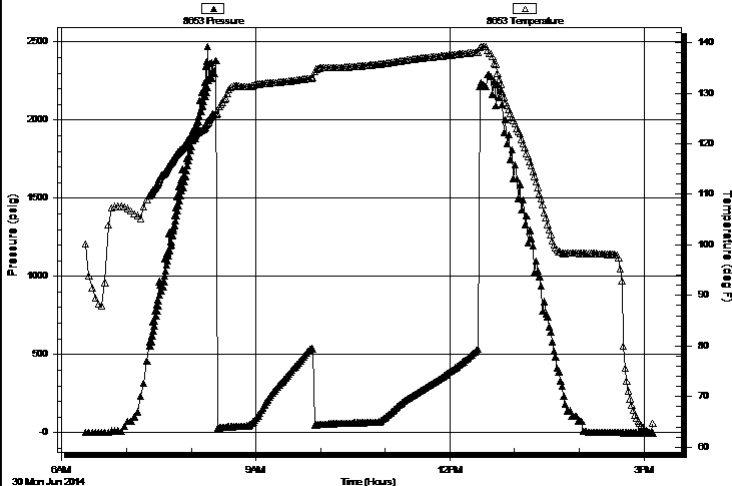
15:08:00

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- 1/4" Blow built to 3"
60 - IS- No Return
60 - FF- Surface Blow built 3 1/4"
90 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM 60M 40o	0.30
63.00	Clean Gassy Oil 10G 90o	0.31

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling CO INC

8-1s-37w Cheyenne,KS

250 N Water STE 300
Wichita KS 67202

Jean #4-8

Job Ticket: 58233

DST#: 4

ATTN: Rocky Milford

Test Start: 2014.06.30 @ 06:21:00

Tool Information

Drill Pipe:	Length: 4352.00 ft	Diameter: 3.80 inches	Volume: 61.05 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 61.96 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4535.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	78.00 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			4508.00	
Shut In Tool	5.00			4513.00	
Hydraulic tool	5.00			4518.00	
Jars	5.00			4523.00	
Safety Joint	3.00			4526.00	
Packer	5.00			4531.00	28.00 Bottom Of Top Packer
Packer	4.00			4535.00	
Packer - Shale	0.00			4535.00	
Stubb	1.00			4536.00	
Recorder	0.00	8653	Outside	4536.00	
Recorder	0.00	8874	Inside	4536.00	
Perforations	10.00			4546.00	
Change Over Sub	1.00			4547.00	
Drill Pipe	32.00			4579.00	
Change Over Sub	1.00			4580.00	
Bullnose	5.00			4585.00	50.00 Bottom Packers & Anchor
Total Tool Length:	78.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling CO INC
250 N Water STE 300
Wichita KS 67202
ATTN: Rocky Milford

8-1s-37w Cheyenne,KS
Jean #4-8
Job Ticket: 58233 **DST#: 4**
Test Start: 2014.06.30 @ 06:21:00

Mud and Cushion Information

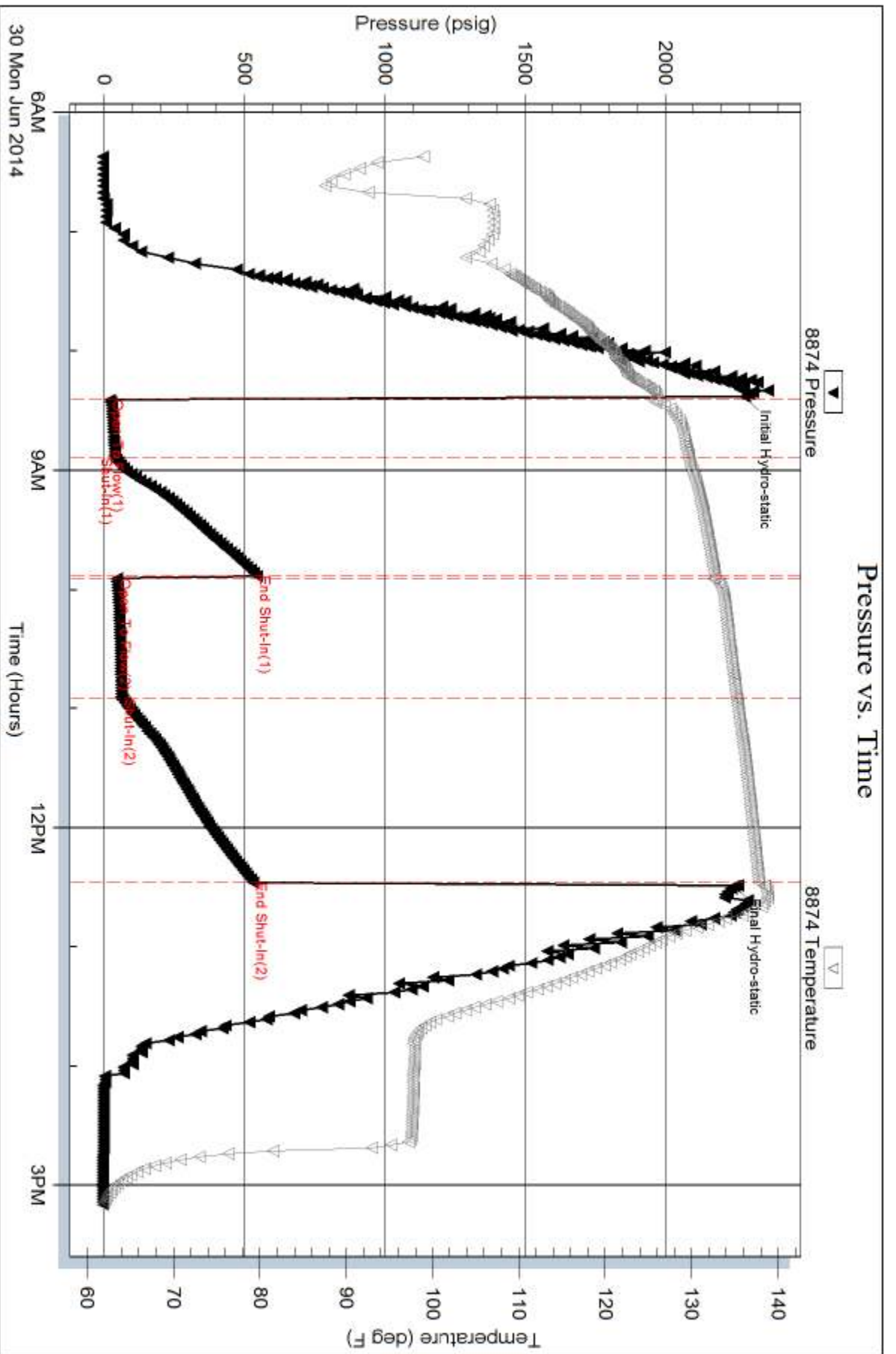
Mud Type: Gel Chem	Cushion Type:	Oil API: 31 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 65.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.99 in ³	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 700.00 ppm		
Filter Cake: 2.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OCM 60M 40o	0.295
63.00	Clean Gassy Oil 10G 90o	0.310

Total Length: 123.00 ft Total Volume: 0.605 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: Oil API 33 @ 80 deg = 31 corrected

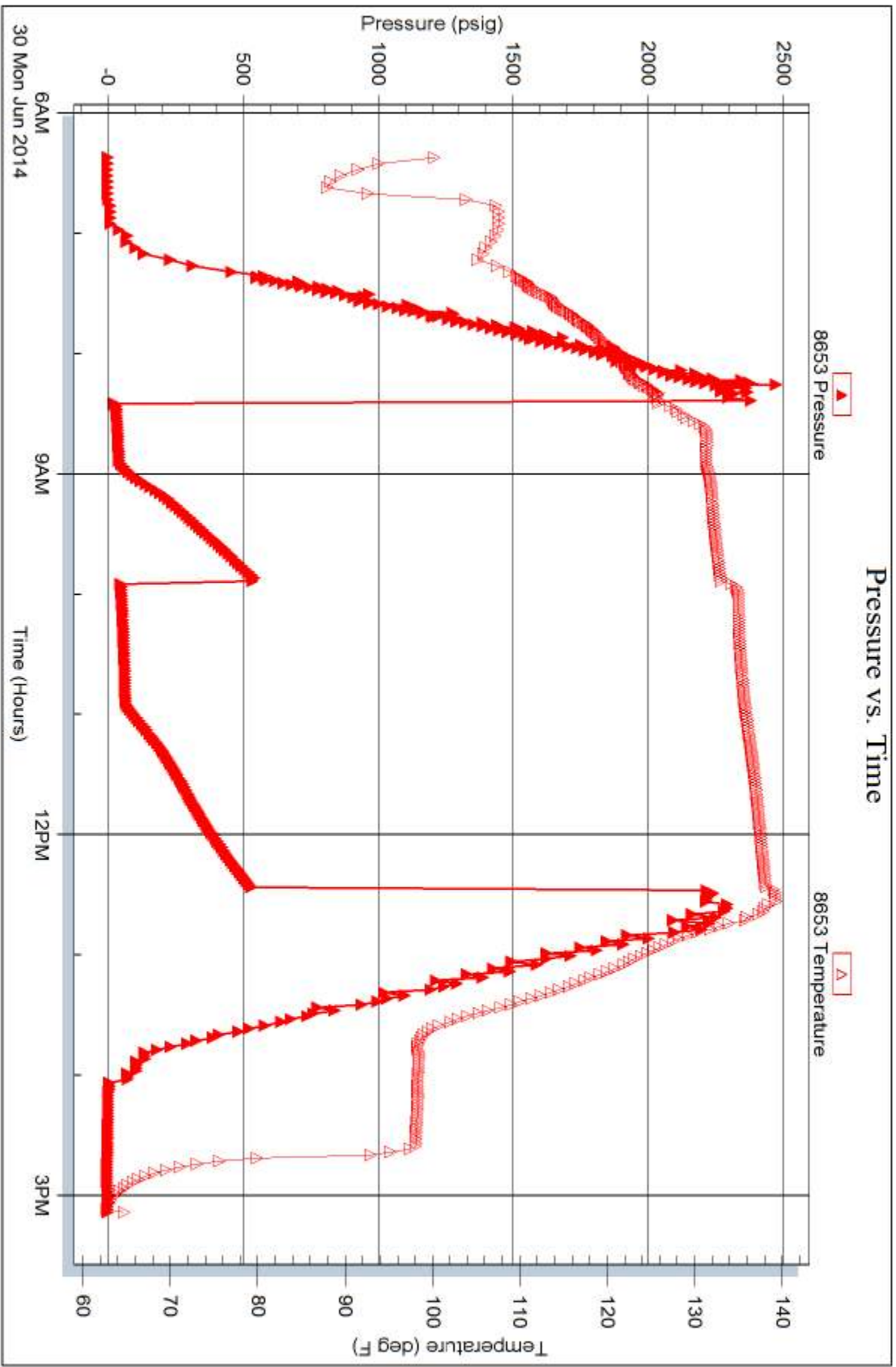


Serial #: 8653

Outside Murfin Drilling CO INC

Jean #4-8

DST Test Number: 4





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53691

Well Name & No. Jean #4-8 Test No. 1 Date 6-27-2014
 Company MURFIN DRILLING CO, INC Elevation ~~3200~~ 3216 KB 3211 GL
 Address 250 N water STE 300 Wichita KS, 67202
 Co. Rep / Geo. Rocky Millford Rig MURFIN #8
 Location: Sec. 8 Twp. 15 Rge. 37W Co. Cheyenne State KS

Interval Tested 3781 - 3955 Zone Tested Stotler
 Anchor Length 174 Drill Pipe Run 3592 Mud Wt. 8.9
 Top Packer Depth 3777 Drill Collars Run 185 Vis 51
 Bottom Packer Depth 3781 shale Wt. Pipe Run 0 WL 6.0
 Total Depth 3955 Chlorides 600 ppm System LCM 4.0
 Blow Description IF - Blow bailed to 3/4"
ISE - No return
FP - No blow
PSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</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 70 BHT 125 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1859 Test 1150 T-On Location 12:25 6-27
 (B) First Initial Flow 63 Jars 250 T-Started 01:25 6-27
 (C) First Final Flow 63 Safety Joint 75 T-Open 09:12 6-27
 (D) Initial Shut-In 454 Circ Sub _____ T-Pulled 07:12 6-27
 (E) Second Initial Flow 65 Hourly Standby _____ T-Out 09:20 6-27
 (F) Second Final Flow 67 Mileage 134 RT 207.70
 (G) Final Shut-In 362 Sampler _____
 (H) Final Hydrostatic 1839 Straddle _____

Shale Packer 250 Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1932.70
 Sub Total 1932.70 MP/DST Disc't _____

Approved By Rocky Millford Our Representative Robert Zochow
 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. 53692

Well Name & No. Jean # 4-8 Test No. 2 Date 6-28-2014
 Company MURFIN DRILLING CO, Inc. Elevation 3216 KB 3211 GL
 Address 250 N Water STE 300 Wichita KS, 67202
 Co. Rep / Geo. Rocky Milford Rig MURFIN #8
 Location: Sec. 8 Twp. 25 Rge. 37W Co. Cheyenne State KS

Interval Tested 4120 - 4242 Zone Tested LKC "A-D"
 Anchor Length 122 Drill Pipe Run 3941 Mud Wt. 9.1
 Top Packer Depth 4116 Drill Collars Run 185 Vis 55
 Bottom Packer Depth 4120 Wt. Pipe Run 0 WL 5-2
 Total Depth 4242 Chlorides 700 ppm System LCM 4.0

Blow Description IF - Blow built to 2"
ISI - No return
FF - Blow built to 4 1/2
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>205</u>	<u>9mco</u>	<u>10</u>	<u>50</u>	<u>40</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 205 BHT 131 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2018 Test 1250 T-On Location 11:30 6-28
 (B) First Initial Flow 78 Jars 250 T-Started 12:10 6-28
 (C) First Final Flow 93 Safety Joint 75 T-Open 14:37 6-28
 (D) Initial Shut-In 1396 Circ Sub _____ T-Pulled 18:37 6-28
 (E) Second Initial Flow 100 Hourly Standby _____ T-Out 21:02 6-28
 (F) Second Final Flow 107 Mileage 134 RT 207.70 Comments Chased Tool
 (G) Final Shut-In 1363 Sampler _____ 8' after open Tool
 (H) Final Hydrostatic 2017 Straddle _____ on some mud
 Shale Packer _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 75
 Day Standby 1d 2.25h Total 1857.70
 Accessibility _____ MP/DST Disc't _____

Sub Total 1782.70

Approved By Rocky Milford Our Representative Robert Zochew

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58232

4/10

Well Name & No. Jean #4-8 Test No. 3 Date 6-29-14
 Company Murphy Drilling Co., Inc. Elevation 3216 KB 3211 GL
 Address 250 N Water STE # 3000 Wichita KS, 67202
 Co. Rep / Geo. Rocky Milford Rig Murphy #8
 Location: Sec. 8 Twp. 15 Rge. 37W Co. Cheyenne State KS

Interval Tested 4238-4386 Zone Tested LKC "G-5"
 Anchor Length 148' Drill Pipe Run 4040 Mud Wt. 9.1
 Top Packer Depth 4234 Drill Collars Run 185' Vis 60
 Bottom Packer Depth 4238 Wt. Pipe Run 8 WL 5.2
 Total Depth 4386 Chlorides 7000 ppm System LCM 5#
 Blow Description IF - 1/4" Blow built to 1/4"
ISI - No Return
FF - Surface Blow started at 10 min. Built to 1/4"
FSL - No Return

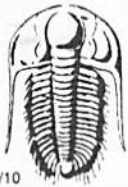
Rec	Feet of	%gas	spots	%oil	%water	%mud
<u>800</u>	<u>OSM</u>				<u>1000</u>	
Rec	Feet of	%gas		%oil	%water	%mud
Rec	Feet of	%gas		%oil	%water	%mud
Rec	Feet of	%gas		%oil	%water	%mud
Rec	Feet of	%gas		%oil	%water	%mud

Rec Total 800 BHT 131 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 2062 Test 1250 T-On Location 12:30 PM
 (B) First Initial Flow 25 Jars 250 T-Started 12:43 PM
 (C) First Final Flow 42 Safety Joint 75 T-Open 3:18 PM
 (D) Initial Shut-In 924 Circ Sub _____ T-Pulled 7:18 PM
 (E) Second Initial Flow 48 Hourly Standby _____ T-Out 9:30 PM
 (F) Second Final Flow 69 Mileage 134 RT 207.70 Comments _____
 (G) Final Shut-In 890 Sampler _____
 (H) Final Hydrostatic 2054 Straddle _____
 Shale Packer 250 Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 2032.70
 Accessibility _____ MP/DST Disc't _____
 Sub Total 2032.70

Approved By _____ Our Representative 

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58233

4/10

Well Name & No. Jean #4-8 Test No. 4 Date 6-30-14
 Company Murfin Drilling Co., Inc. Elevation 3216 KB 3211 GL
 Address 250 N Water STE # 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #8
 Location: Sec. 8 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4535-4585 Zone Tested Pawnee
 Anchor Length 50' Drill Pipe Run 4352 Mud Wt. 9.3
 Top Packer Depth 4531 Drill Collars Run 185 Vis 65
 Bottom Packer Depth 4535 Wt. Pipe Run 0 WL 6.0
 Total Depth 4585 Chlorides 700 ppm System LCM 4#
 Blow Description IF- 1/4" Blow built to 3"
ISI- NO Return
FF- Surface Blow built to
PSI- NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>63</u>	<u>Clean Gassy Oil</u>	<u>10</u>	<u>90</u>		
<u>60</u>	<u>CCM</u>		<u>40</u>		<u>60</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 123' BHT 138 Gravity 31 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2282 Test 1250 T-On Location 6:20 PM
 (B) First Initial Flow 20 Jars 250 T-Started 6:21 PM
 (C) First Final Flow 39 Safety Joint 75 T-Open 8:25 PM
 (D) Initial Shut-In 545 Circ Sub _____ T-Pulled 12:25 AM
 (E) Second Initial Flow 48 Hourly Standby _____ T-Out 3:10 AM
 (F) Second Final Flow 62 Mileage 134 RT 207.70 Comments Oil API 33 @ 100
 (G) Final Shut-In 530 Sampler _____
 (H) Final Hydrostatic 2246 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 2032.70
 Accessibility _____ MP/DST Disc't _____

Initial Open 300
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

Sub Total 2032.70

Approved By _____ Our Representative [Signature]

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