



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Jeff Christian

Patti #1-10

10-1s-37w Cheyenne,KS

Start Date: 2013.04.28 @ 13:10:00

End Date: 2013.04.28 @ 21:12:30

Job Ticket #: 50713 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.05.10 @ 10:49:54



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Jeff Christian

10-1s-37w Cheyenne,KS

Patti #1-10

Job Ticket: 50713

DST#: 1

Test Start: 2013.04.28 @ 13:10:00

GENERAL INFORMATION:

Formation: **Foraker**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:59:45

Time Test Ended: 21:12:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: 3680.00 ft (KB) To 3722.00 ft (KB) (TVD)

Reference Elevations: 3200.00 ft (KB)

Total Depth: 3722.00 ft (KB) (TVD)

3190.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 6799

Inside

Press @ Run Depth: 125.97 psig @ 3681.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.28

End Date:

2013.04.28

Last Calib.:

2013.04.28

Start Time: 13:10:05

End Time:

21:12:29

Time On Btm:

2013.04.28 @ 15:57:45

Time Off Btm:

2013.04.28 @ 19:01:45

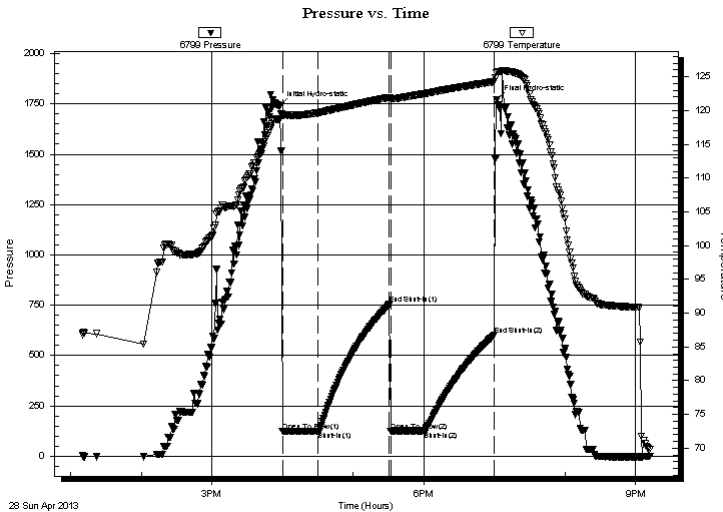
TEST COMMENT: 30 - IF - Surface Blow built to 1/8" Then died back to Weak Surface Blow

60 - ISI - No Return

30 - FF - No Blow

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1740.88	118.71	Initial Hydro-static
2	123.07	119.29	Open To Flow (1)
33	124.88	119.66	Shut-In(1)
93	754.14	121.95	End Shut-In(1)
94	123.00	121.75	Open To Flow (2)
122	125.97	122.47	Shut-In(2)
182	601.28	124.26	End Shut-In(2)
184	1772.16	125.65	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
190.00	Mud 100M	0.93

Gas Rates

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



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DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50713

DST#: 1

ATTN: Jeff Christian

Test Start: 2013.04.28 @ 13:10:00

GENERAL INFORMATION:

Formation: **Foraker**

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Time Tool Opened: 15:59:45

Time Test Ended: 21:12:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: 3680.00 ft (KB) To 3722.00 ft (KB) (TVD)

Reference Elevations: 3200.00 ft (KB)

Total Depth: 3722.00 ft (KB) (TVD)

3190.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8648 Inside

Press @ Run Depth: psig @ 3681.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.28 End Date: 2013.04.28

Last Calib.: 2013.04.28

Start Time: 13:10:05 End Time: 21:10:44

Time On Btm:

Time Off Btm:

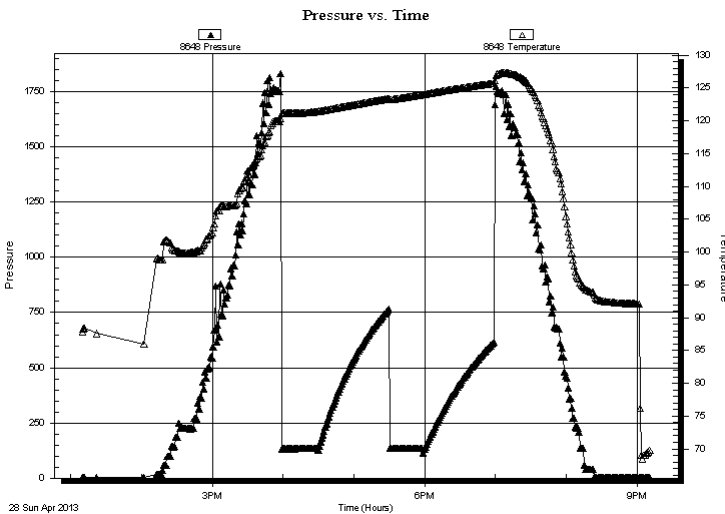
TEST COMMENT: 30 - IF - Surface Blow built to 1/8" Then died back to Weak Surface Blow

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)
190.00	Mud 100M	0.93

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50713

DST#: 1

ATTN: Jeff Christian

Test Start: 2013.04.28 @ 13:10:00

Tool Information

Drill Pipe:	Length: 3140.00 ft	Diameter: 3.80 inches	Volume: 44.05 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 46.68 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3680.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	71.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: tol slid approx 10' to bottom

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3652.00	
Shut In Tool	5.00			3657.00	
Hydraulic tool	5.00			3662.00	
Jars	5.00			3667.00	
Safety Joint	3.00			3670.00	
Packer	5.00			3675.00	29.00 Bottom Of Top Packer
Packer	5.00			3680.00	
Stubb	1.00			3681.00	
Recorder	0.00	6799	Inside	3681.00	
Recorder	0.00	8648	Inside	3681.00	
Perforations	3.00			3684.00	
Change Over Sub	1.00			3685.00	
Drill Pipe	31.00			3716.00	
Change Over Sub	1.00			3717.00	
Bullnose	5.00			3722.00	42.00 Bottom Packers & Anchor

Total Tool Length: 71.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50713

DST#: 1

ATTN: Jeff Christian

Test Start: 2013.04.28 @ 13:10:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
190.00	Mud 100M	0.934

Total Length: 190.00 ft Total Volume: 0.934 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

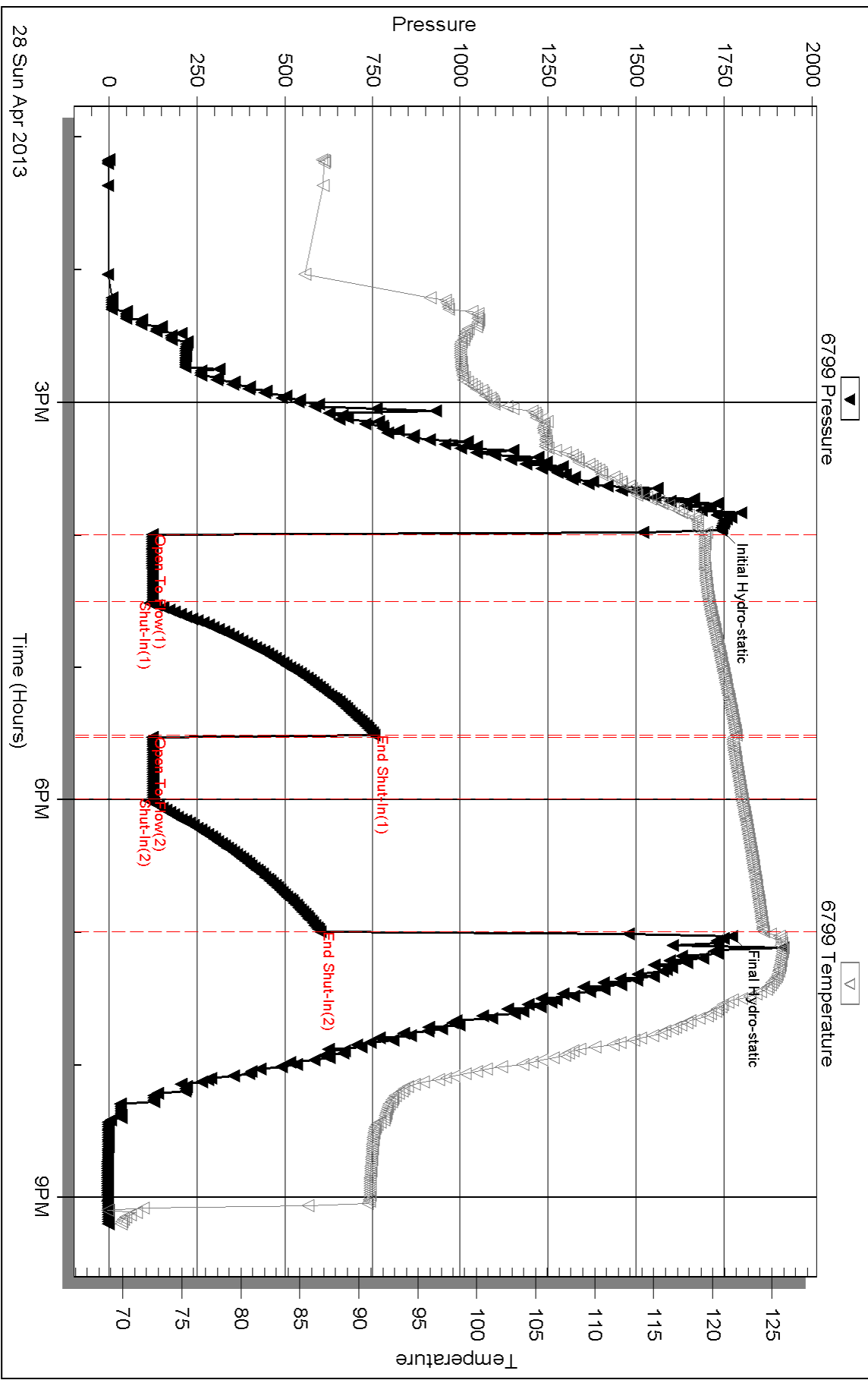
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



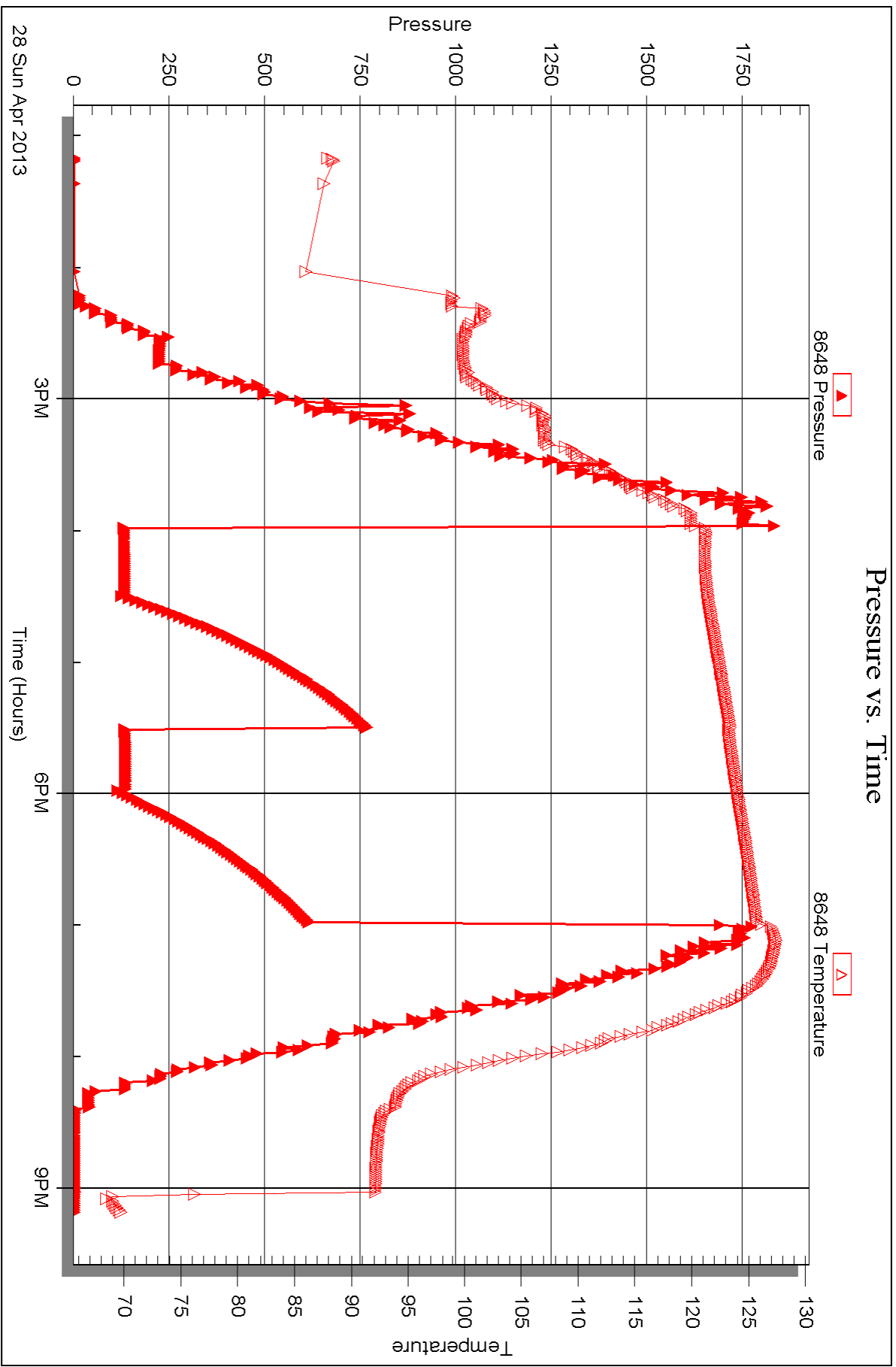
Serial #: 8648

Inside

Murfin Drilling Co., Inc.

Patti #1-10

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 50713

Printed: 2013.05.10 @ 10:49:58



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Jeff Christian

Patti #1-10

10-1s-37w Cheyenne,KS

Start Date: 2013.04.29 @ 21:50:00

End Date: 2013.04.30 @ 05:02:45

Job Ticket #: 50714 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.05.10 @ 10:48:58



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TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50714

DST#: 2

ATTN: Jeff Christian

Test Start: 2013.04.29 @ 21:50:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:02:45

Time Test Ended: 05:02:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: 4018.00 ft (KB) To 4080.00 ft (KB) (TVD)

Reference Elevations: 3200.00 ft (KB)

Total Depth: 4080.00 ft (KB) (TVD)

3190.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 6799

Inside

Press @ Run Depth: 22.86 psig @ 4019.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.29

End Date:

2013.04.30

Last Calib.: 2013.04.30

Start Time: 21:50:05

End Time:

05:02:44

Time On Btm: 2013.04.30 @ 00:00:45

Time Off Btm: 2013.04.30 @ 03:17:45

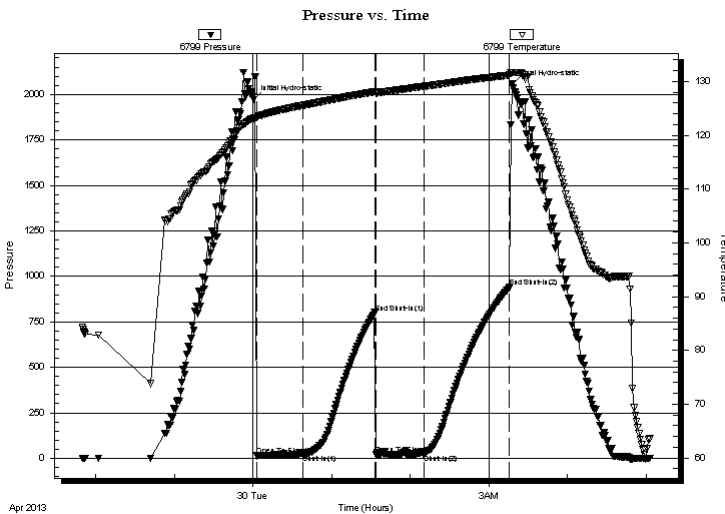
TEST COMMENT: 30 - IF- Surface Blow built to 1/8" then died in 25 min.

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1970.69	123.18	Initial Hydro-static
2	14.12	123.31	Open To Flow (1)
38	21.24	125.55	Shut-In(1)
92	800.91	128.08	End Shut-In(1)
93	19.64	127.85	Open To Flow (2)
130	22.86	129.10	Shut-In(2)
195	939.60	131.17	End Shut-In(2)
197	2056.55	131.64	Final Hydro-static

Recovery

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

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Jeff Christian

10-1s-37w Cheyenne,KS
Patti #1-10
Job Ticket: 50714 **DST#: 2**
Test Start: 2013.04.29 @ 21:50:00

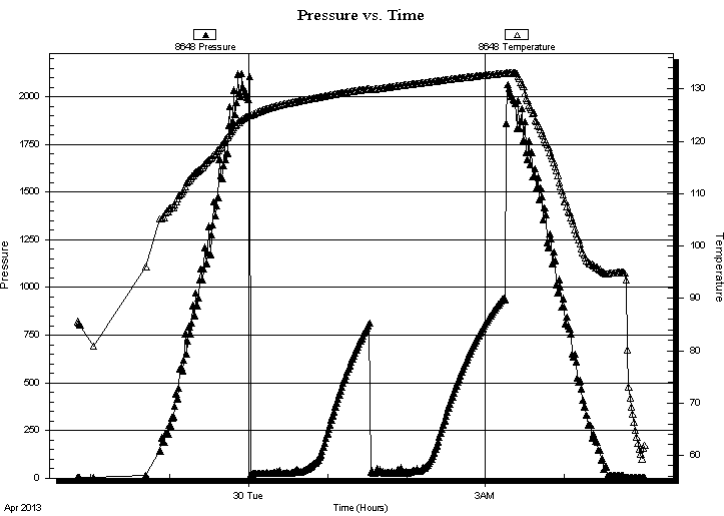
GENERAL INFORMATION:

Formation: **Oread**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:02:45
Time Test Ended: 05:02:45
Interval: **4018.00 ft (KB) To 4080.00 ft (KB) (TVD)**
Total Depth: 4080.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 43
Reference Elevations: 3200.00 ft (KB)
3190.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8648 Inside

Press@RunDepth:	psig @	4019.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2013.04.29	End Date:	2013.04.30	Last Calib.:	2013.04.30
Start Time:	21:50:05	End Time:	05:01:14	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: 30 - IF- Surface Blow built to 1/8" then died in 25 min.
60 - IS- No Return
30 - FF- No Blow
60 - FS- No Return



PRESSURE SUMMARY

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

Recovery

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

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50714

DST#: 2

ATTN: Jeff Christian

Test Start: 2013.04.29 @ 21:50:00

Tool Information

Drill Pipe:	Length: 3486.00 ft	Diameter: 3.80 inches	Volume: 48.90 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 51.53 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4018.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	62.00 ft			
Tool Length:	91.00 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			3990.00	
Shut In Tool	5.00			3995.00	
Hydraulic tool	5.00			4000.00	
Jars	5.00			4005.00	
Safety Joint	3.00			4008.00	
Packer	5.00			4013.00	29.00 Bottom Of Top Packer
Packer	5.00			4018.00	
Stubb	1.00			4019.00	
Recorder	0.00	6799	Inside	4019.00	
Recorder	0.00	8648	Inside	4019.00	
Perforations	23.00			4042.00	
Change Over Sub	1.00			4043.00	
Drill Pipe	31.00			4074.00	
Change Over Sub	1.00			4075.00	
Bullnose	5.00			4080.00	62.00 Bottom Packers & Anchor

Total Tool Length: 91.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50714

DST#: 2

ATTN: Jeff Christian

Test Start: 2013.04.29 @ 21:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud 100M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

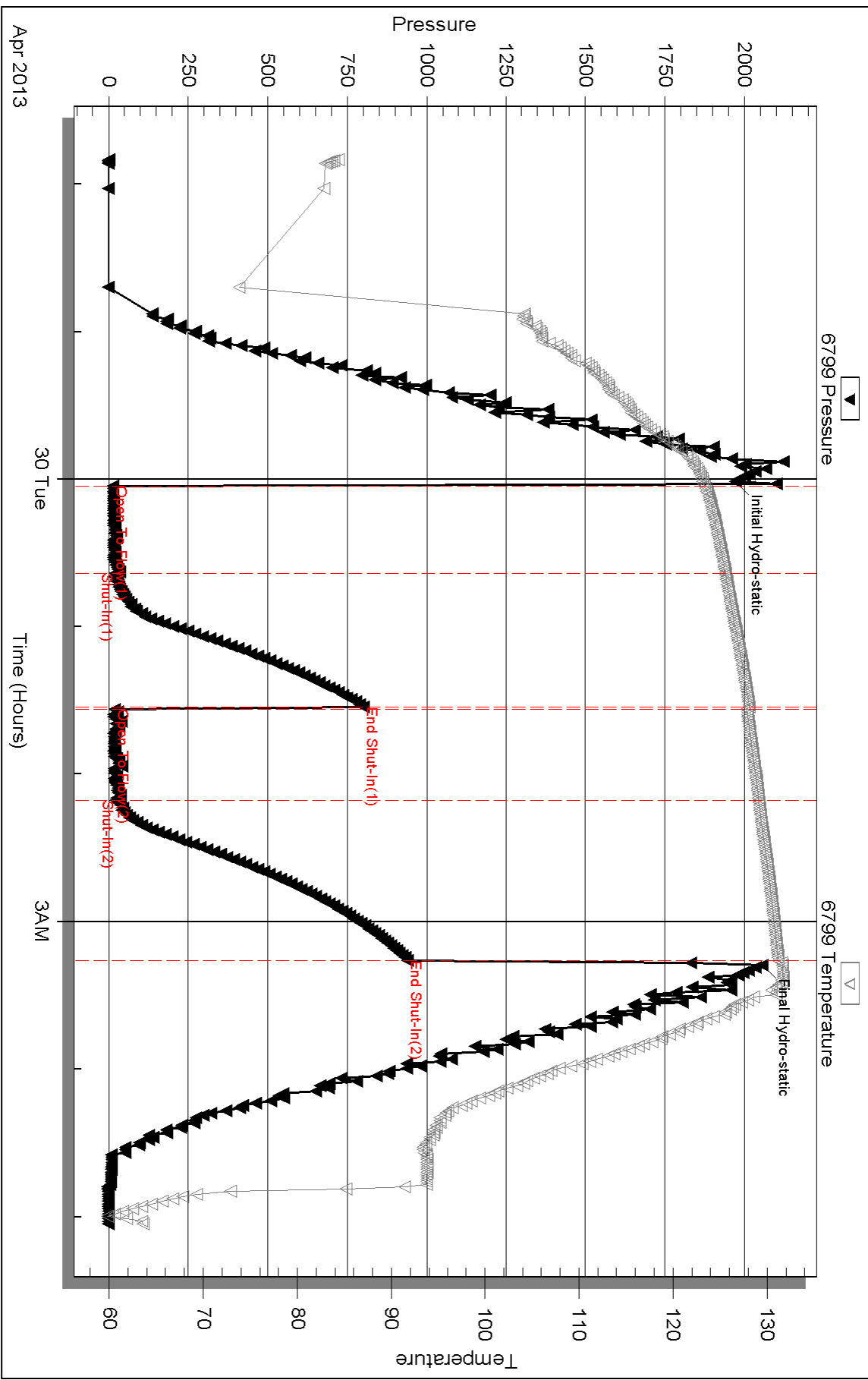
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



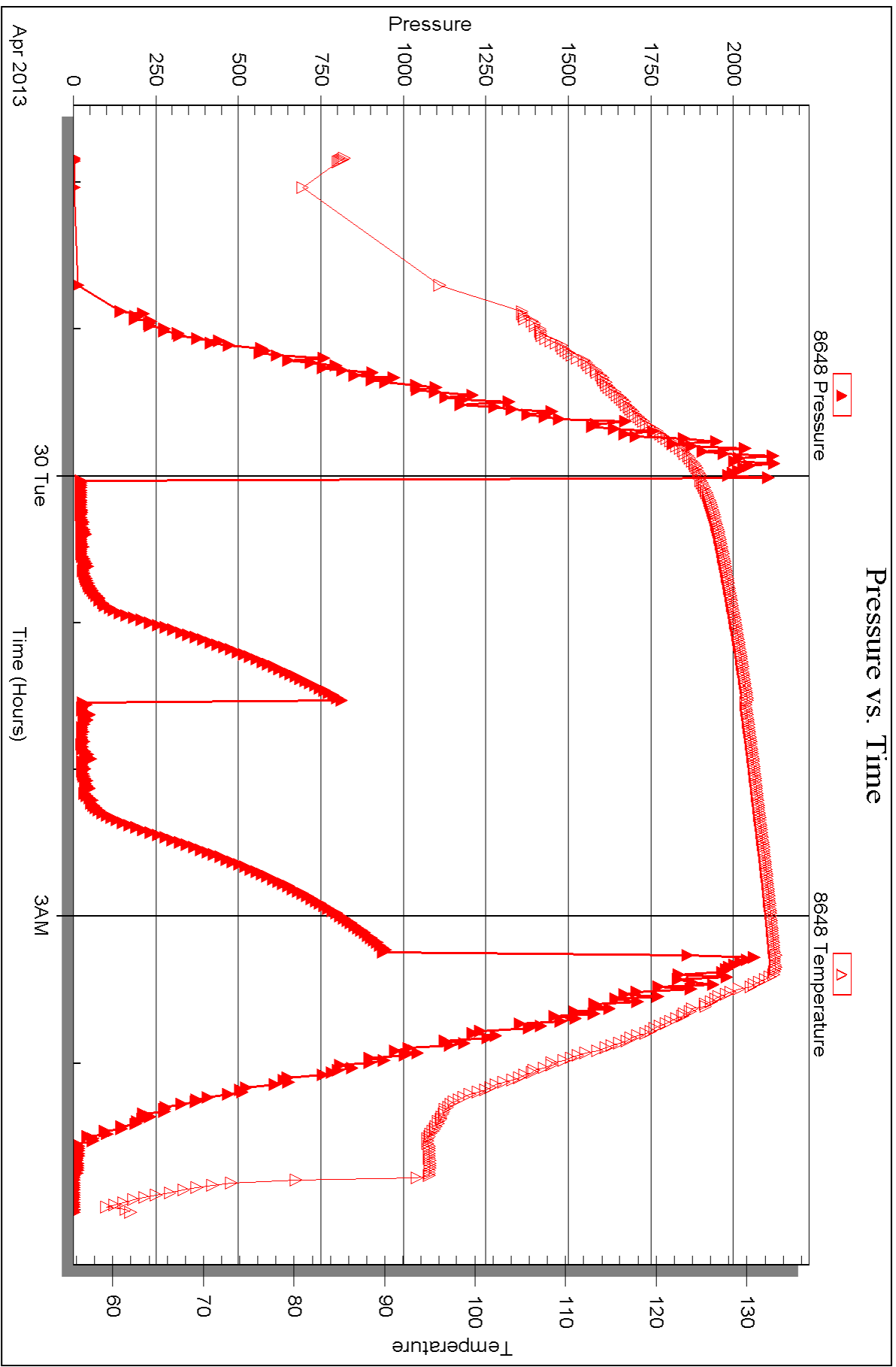
Serial #: 8648

Inside

Murfin Drilling Co., Inc.

Patti #1-10

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 50714

Printed: 2013.05.10 @ 10:49:01



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Jeff Christian

Patti #1-10

10-1s-37w Cheyenne,KS

Start Date: 2013.04.30 @ 18:55:00

End Date: 2013.05.01 @ 05:02:00

Job Ticket #: 50715 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.05.10 @ 10:48:12



**TRILOBITE
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DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Jeff Christian

10-1s-37w Cheyenne, KS

Patti #1-10

Job Ticket: 50715

DST#: 3

Test Start: 2013.04.30 @ 18:55:00

GENERAL INFORMATION:

Formation: **LKC "A-D"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 22:18:30
 Tester: Kevin Mack
 Time Test Ended: 05:02:00
 Unit No: 43
 Interval: **4092.00 ft (KB) To 4221.00 ft (KB) (TVD)**
 Reference Elevations: 3200.00 ft (KB)
 Total Depth: 4221.00 ft (KB) (TVD)
 3190.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 10.00 ft

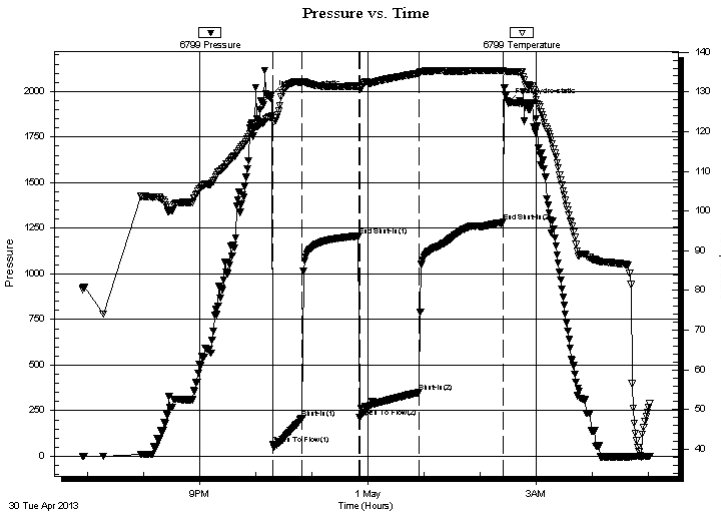
Serial #: 6799

Inside

Press @ Run Depth: 349.88 psig @ 4093.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.04.30 End Date: 2013.05.01 Last Calib.: 2013.05.01
 Start Time: 18:55:05 End Time: 05:02:00 Time On Btm: 2013.04.30 @ 22:17:15
 Time Off Btm: 2013.05.01 @ 02:29:45

TEST COMMENT: 30 - IF- BoB in 28 min.
 60 - IS- No Return
 60 - FF- Blow started at 2 min. BoB in 32 min.
 90 - FS- No Return

PRESSURE SUMMARY



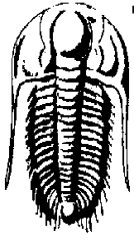
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1981.52	123.94	Initial Hydro-static
2	64.07	122.80	Open To Flow (1)
33	207.18	132.43	Shut-In(1)
93	1208.09	131.51	End Shut-In(1)
94	211.94	131.13	Open To Flow (2)
158	349.88	134.74	Shut-In(2)
248	1283.79	135.42	End Shut-In(2)
253	1936.65	135.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	OCMW 5o 65W 30M	0.44
180.00	OCWM 10o 40W 50M	0.89
180.00	OCWM 10o 30W 60M	0.89
280.00	OCM 10o 90M	3.16

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Jeff Christian

10-1s-37w Cheyenne,KS

Patti #1-10

Job Ticket: 50715

DST#: 3

Test Start: 2013.04.30 @ 18:55:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:18:30

Time Test Ended: 05:02:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: 4092.00 ft (KB) To 4221.00 ft (KB) (TVD)

Reference Elevations: 3200.00 ft (KB)

Total Depth: 4221.00 ft (KB) (TVD)

3190.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8648 Inside

Press @ Run Depth: psig @ 4093.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.30

End Date: 2013.05.01

Last Calib.: 2013.05.01

Start Time: 18:55:05

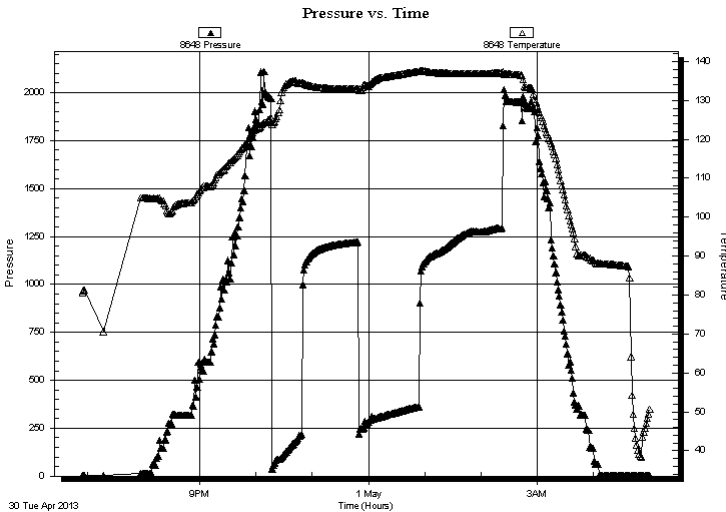
End Time: 04:59:45

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- BoB in 28 min.
60 - IS- No Return
60 - FF- Blow started at 2 min. BoB in 32 min.
90 - FS- No Return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
90.00	OCMW 5o 65W 30M	0.44
180.00	OCWM 10o 40W 50M	0.89
180.00	OCWM 10o 30W 60M	0.89
280.00	OCM 10o 90M	3.16

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50715

DST#: 3

ATTN: Jeff Christian

Test Start: 2013.04.30 @ 18:55:00

Tool Information

Drill Pipe:	Length: 3550.00 ft	Diameter: 3.80 inches	Volume: 49.80 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 52.43 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4092.00 ft			Final 79000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	129.00 ft			
Tool Length:	158.00 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			4064.00	
Shut In Tool	5.00			4069.00	
Hydraulic tool	5.00			4074.00	
Jars	5.00			4079.00	
Safety Joint	3.00			4082.00	
Packer	5.00			4087.00	29.00 Bottom Of Top Packer
Packer	5.00			4092.00	
Stubb	1.00			4093.00	
Recorder	0.00	6799	Inside	4093.00	
Recorder	0.00	8648	Inside	4093.00	
Perforations	27.00			4120.00	
Change Over Sub	1.00			4121.00	
Drill Pipe	94.00			4215.00	
Change Over Sub	1.00			4216.00	
Bullnose	5.00			4221.00	129.00 Bottom Packers & Anchor

Total Tool Length: 158.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50715

DST#: 3

ATTN: Jeff Christian

Test Start: 2013.04.30 @ 18:55:00

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:

7500 ppm

Viscosity: 120.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.37 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 3.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
90.00	OCMW 5o 65W 30M	0.443
180.00	OCWM 10o 40W 50M	0.885
180.00	OCWM 10o 30W 60M	0.885
280.00	OCM 10o 90M	3.162

Total Length: 730.00 ft Total Volume: 5.375 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

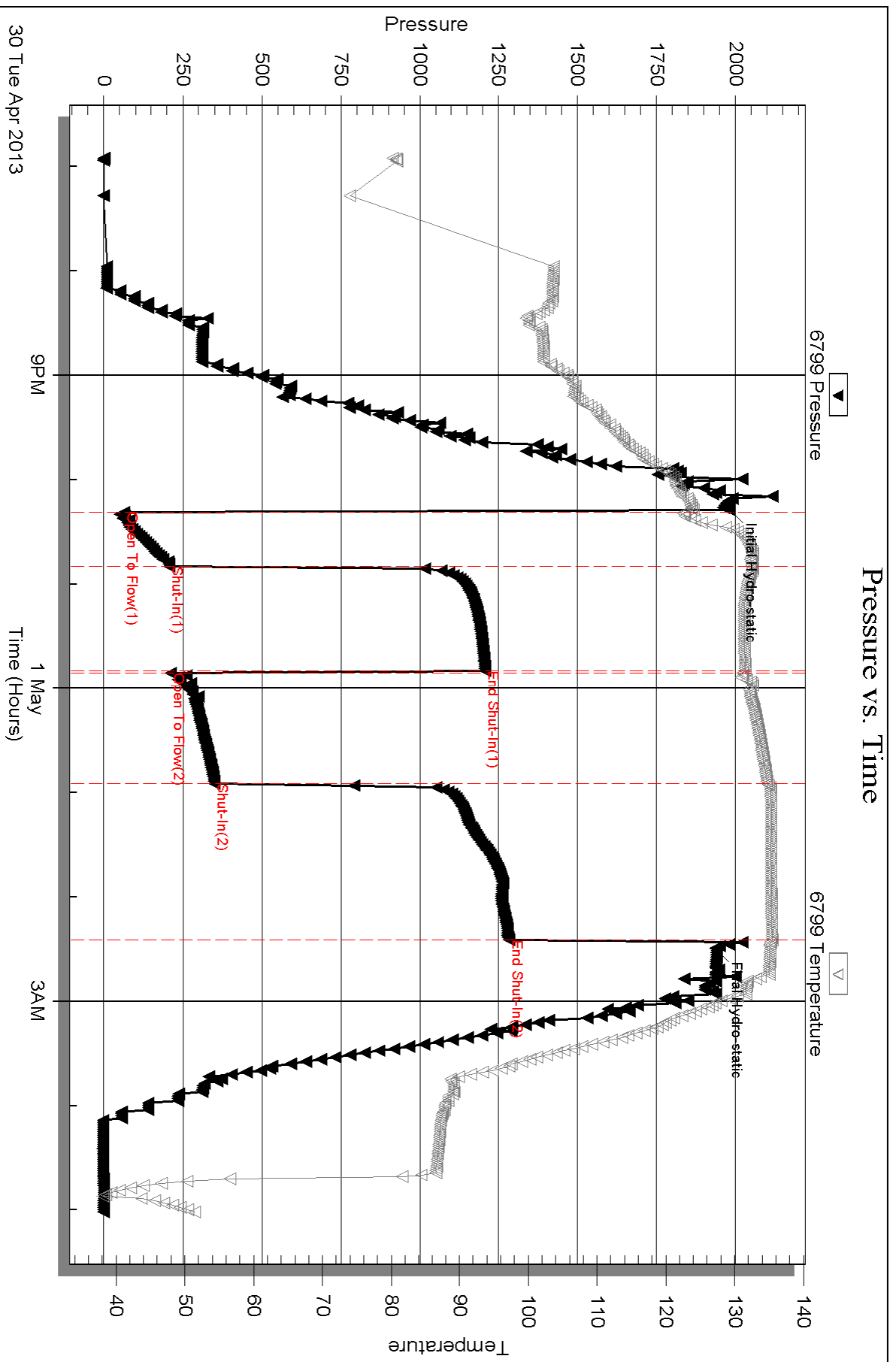
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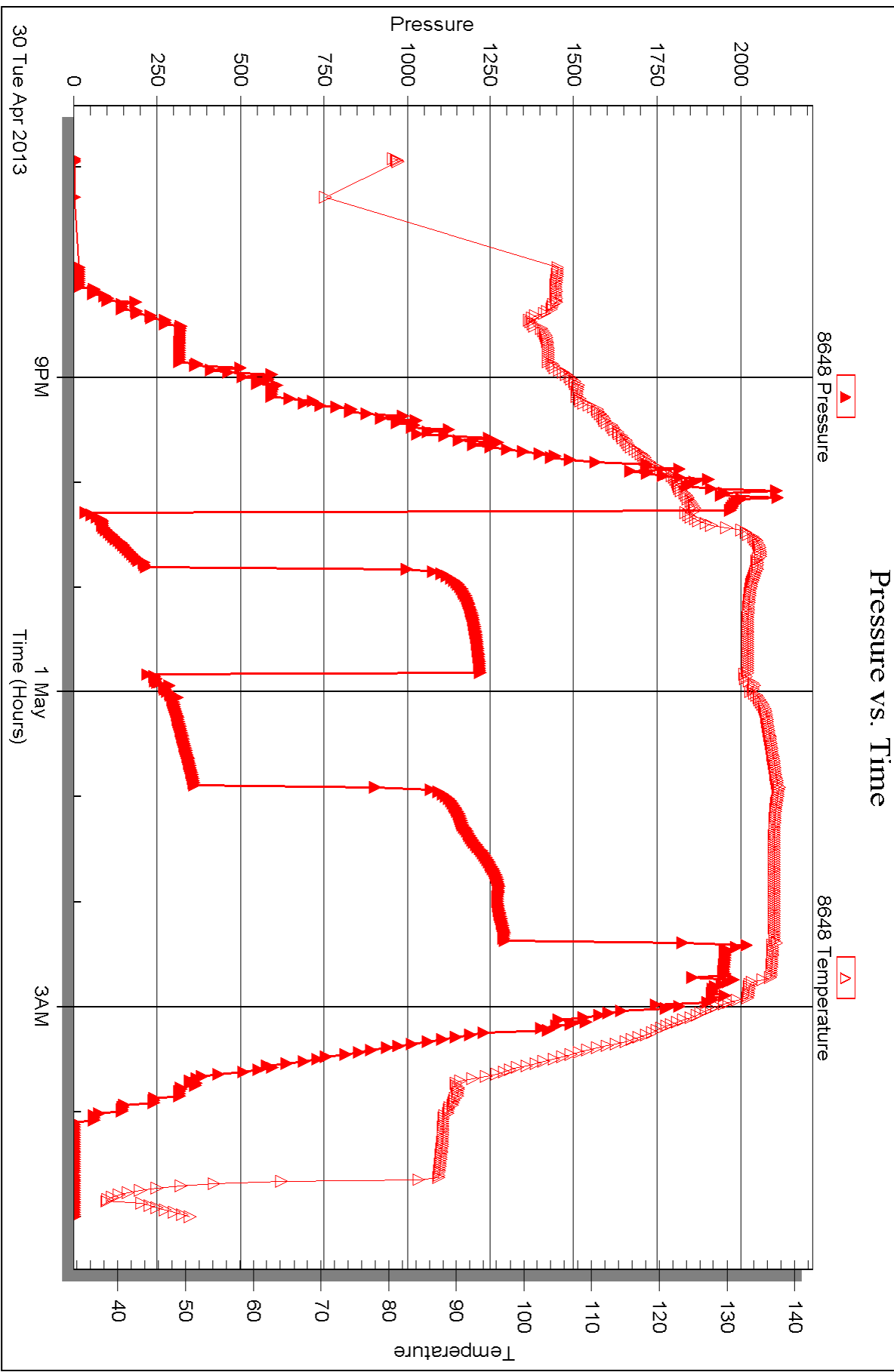
Laboratory Name:

Laboratory Location:

Recovery Comments: RW .98 @ 66 deg = 7,500 ppm

Pressure vs. Time







DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Jeff Christian

Patti #1-10

10-1s-37w Cheyenne,KS

Start Date: 2013.05.01 @ 13:42:00

End Date: 2013.05.01 @ 20:45:15

Job Ticket #: 50716 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.05.10 @ 10:47:36



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N Water STE #300
 Wichita, KS 67202
 ATTN: Jeff Christian

10-1s-37w Cheyenne, KS

Patti #1-10

Job Ticket: 50716

DST#: 4

Test Start: 2013.05.01 @ 13:42:00

GENERAL INFORMATION:

Formation: **LKC "G"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 16:01:30
 Tester: Kevin Mack
 Time Test Ended: 20:45:15
 Unit No: 43
 Interval: **4233.00 ft (KB) To 4278.00 ft (KB) (TVD)**
 Reference Elevations: 3200.00 ft (KB)
 Total Depth: 4278.00 ft (KB) (TVD)
 3190.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 10.00 ft

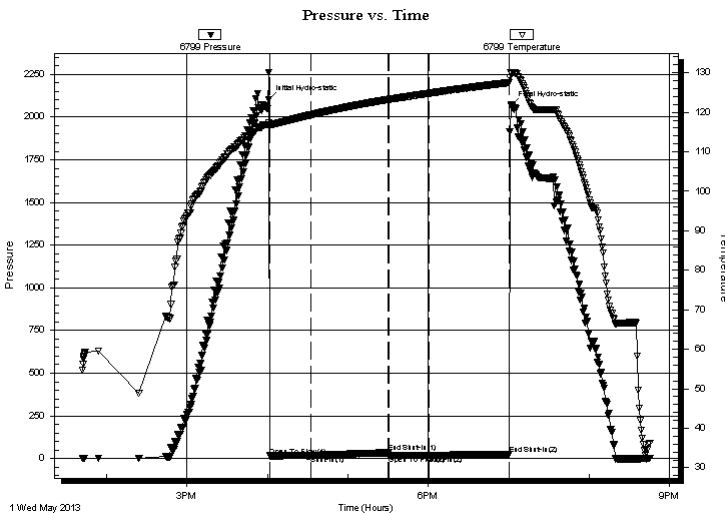
Serial #: 6799

Inside

Press @ Run Depth: 17.70 psig @ 4234.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.05.01 End Date: 2013.05.01 Last Calib.: 2013.05.01
 Start Time: 13:42:05 End Time: 20:45:14 Time On Btm: 2013.05.01 @ 16:01:00
 Time Off Btm: 2013.05.01 @ 19:02:00

TEST COMMENT: 30 - IF- 1/4" Blow built to 1 1/2"
 60 - IS- No Return
 30 - FF- No Blow
 60 - FS- No Return

PRESSURE SUMMARY



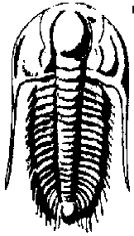
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2101.79	117.39	Initial Hydro-static
1	15.63	116.88	Open To Flow (1)
31	17.36	119.33	Shut-In(1)
89	34.39	123.24	End Shut-In(1)
90	17.52	123.25	Open To Flow (2)
120	17.70	124.80	Shut-In(2)
179	27.31	127.50	End Shut-In(2)
181	2064.54	130.01	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
10.00	OSM 100M (oil spots)	0.05

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

ATTN: Jeff Christian

Job Ticket: 50716

DST#: 4

Test Start: 2013.05.01 @ 13:42:00

GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:01:30

Time Test Ended: 20:45:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: **4233.00 ft (KB) To 4278.00 ft (KB) (TVD)**

Reference Elevations: 3200.00 ft (KB)

Total Depth: 4278.00 ft (KB) (TVD)

3190.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8648 Inside

Press @ RunDepth: psig @ 4234.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.01

End Date:

2013.05.01

Last Calib.:

2013.05.01

Start Time: 13:42:05

End Time:

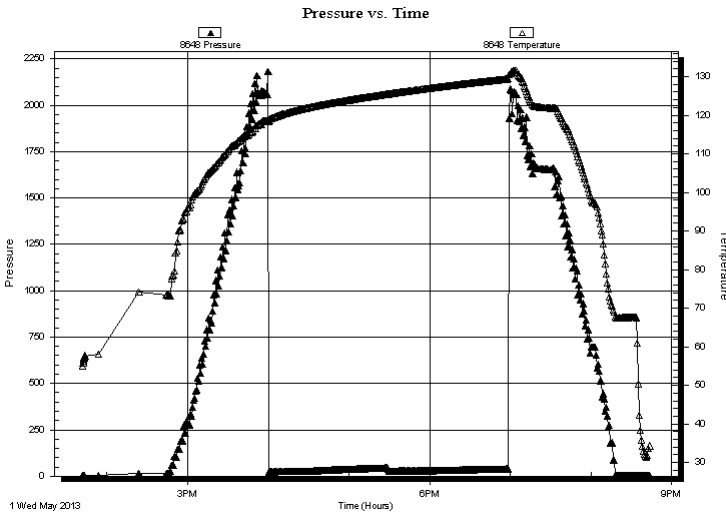
20:43:44

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- 1/4" Blow built to 1 1/2"
60 - IS- No Return
30 - FF- No Blow
60 - FS- No Return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OSM 100M (oil spots)	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50716

DST#: 4

ATTN: Jeff Christian

Test Start: 2013.05.01 @ 13:42:00

Tool Information

Drill Pipe:	Length: 3675.00 ft	Diameter: 3.80 inches	Volume: 51.55 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 54.18 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4233.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	74.00 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			4205.00	
Shut In Tool	5.00			4210.00	
Hydraulic tool	5.00			4215.00	
Jars	5.00			4220.00	
Safety Joint	3.00			4223.00	
Packer	5.00			4228.00	29.00 Bottom Of Top Packer
Packer	5.00			4233.00	
Stubb	1.00			4234.00	
Recorder	0.00	6799	Inside	4234.00	
Recorder	0.00	8648	Inside	4234.00	
Perforations	5.00			4239.00	
Change Over Sub	1.00			4240.00	
Drill Pipe	32.00			4272.00	
Change Over Sub	1.00			4273.00	
Bullnose	5.00			4278.00	45.00 Bottom Packers & Anchor

Total Tool Length: 74.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50716

DST#: 4

ATTN: Jeff Christian

Test Start: 2013.05.01 @ 13:42:00

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: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OSM 100M (oil spots)	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

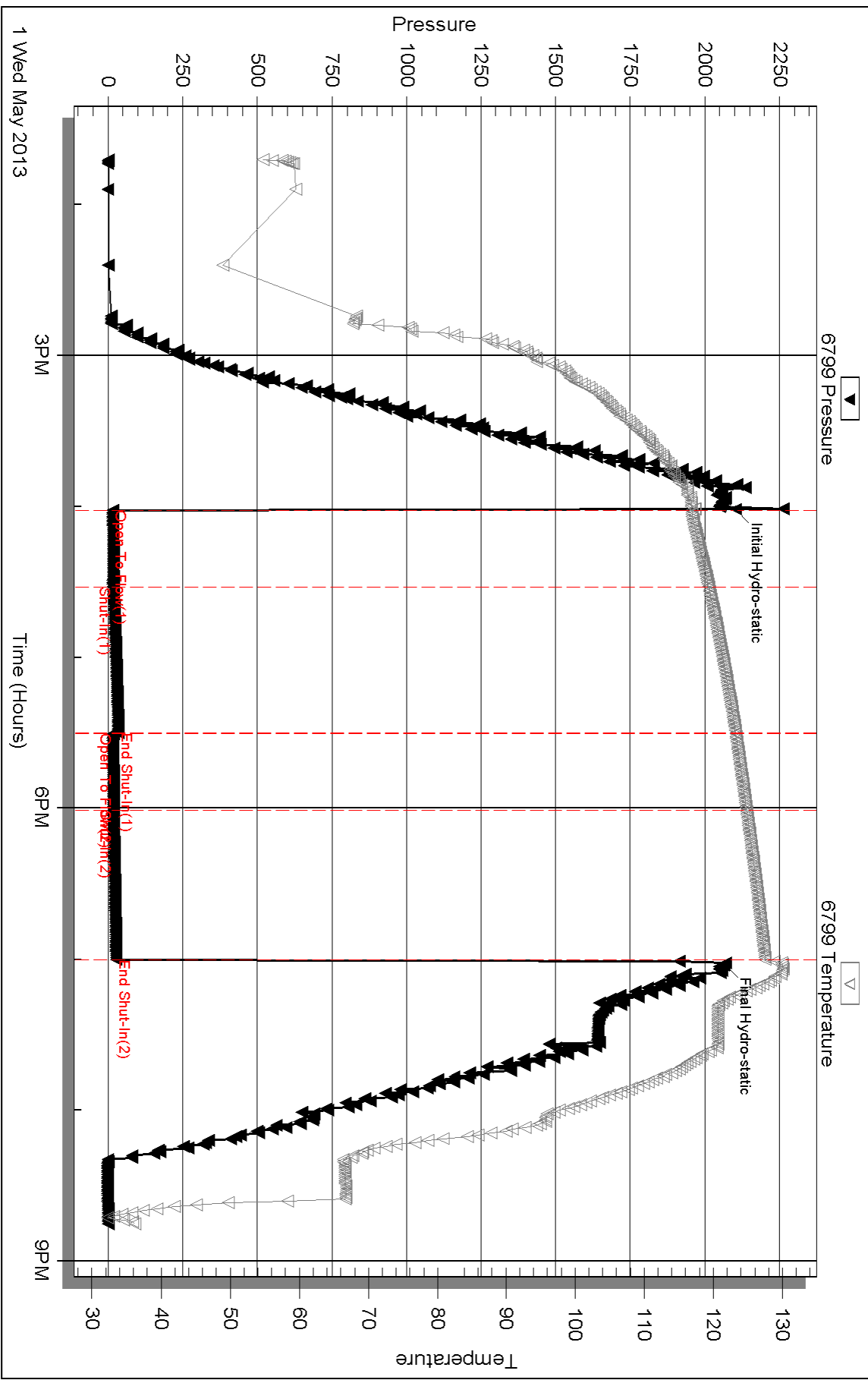
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



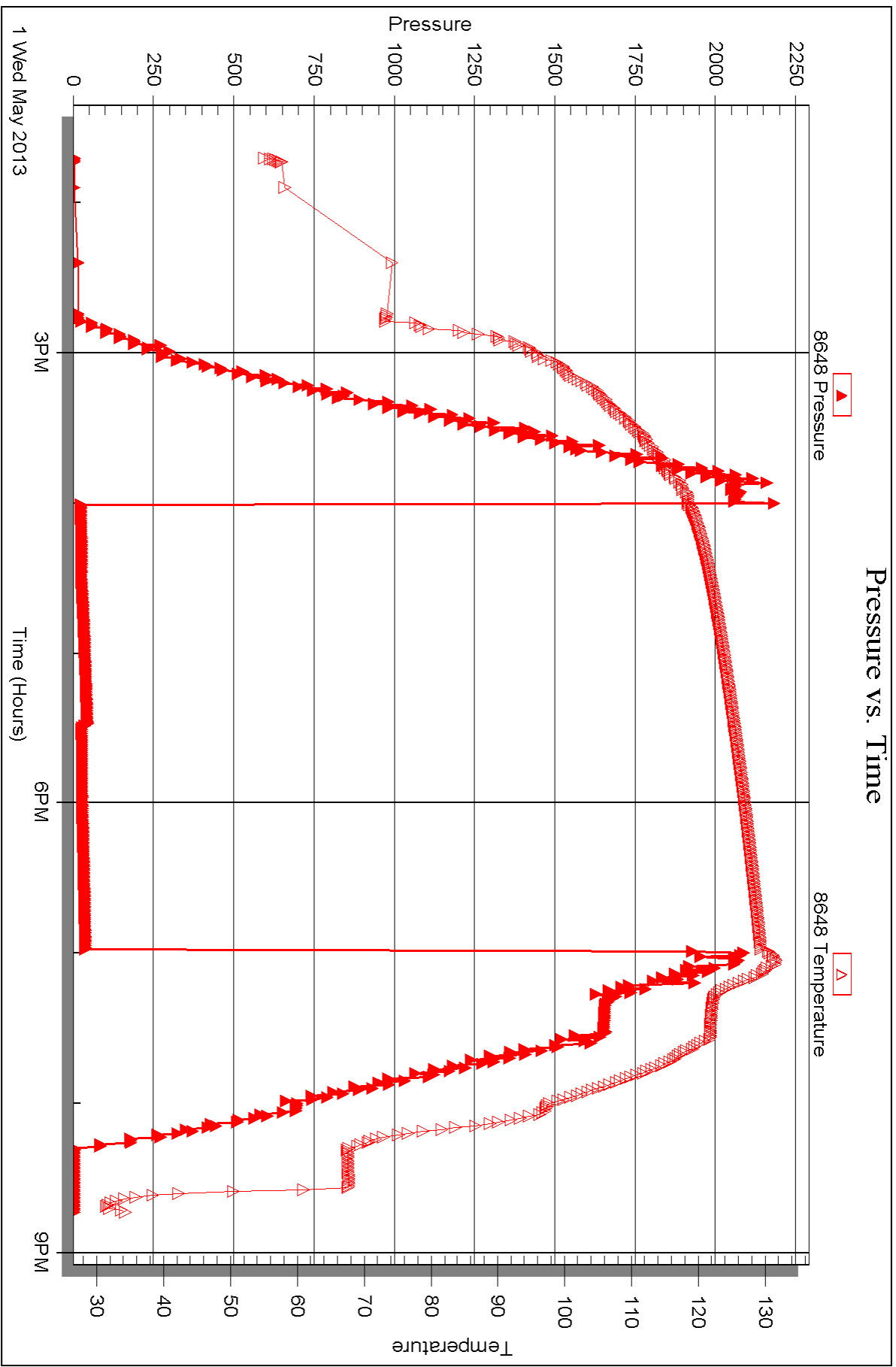
Serial #: 8648

Inside

Murfin Drilling Co., Inc.

Patti #1-10

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 50716

Printed: 2013.05.10 @ 10:47:39



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Jeff Christian

Patti #1-10

10-1s-37w Cheyenne,KS

Start Date: 2013.05.02 @ 08:20:00

End Date: 2013.05.02 @ 16:05:45

Job Ticket #: 50717 DST #: 5

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

Printed: 2013.05.10 @ 10:46:51

Murfin Drilling Co., Inc.
10-1s-37w Cheyenne,KS
Patti #1-10
DST # 5
LKC "I-J"
2013.05.02



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N Water STE #300
 Wichita, KS 67202
 ATTN: Jeff Christian

10-1s-37w Cheyenne,KS

Patti #1-10

Job Ticket: 50717

DST#: 5

Test Start: 2013.05.02 @ 08:20:00

GENERAL INFORMATION:

Formation: **LKC "I-J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:59:45
 Time Test Ended: 16:05:45
 Interval: **4314.00 ft (KB) To 4372.00 ft (KB) (TVD)**
 Total Depth: 4372.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Kevin Mack
 Unit No: 43
 Reference Elevations: 3200.00 ft (KB)
 3190.00 ft (CF)
 KB to GR/CF: 10.00 ft

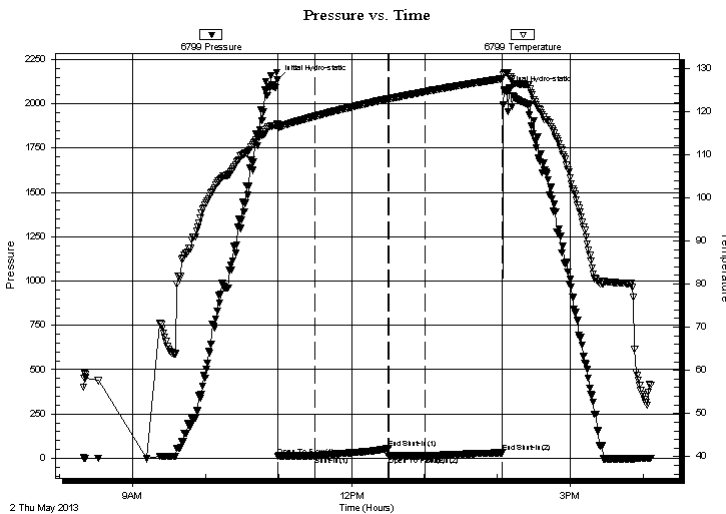
Serial #: 6799

Inside

Press @ RunDepth: 13.44 psig @ 4315.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.05.02 End Date: 2013.05.02 Last Calib.: 2013.05.02
 Start Time: 08:20:05 End Time: 16:05:44 Time On Btm: 2013.05.02 @ 10:59:15
 Time Off Btm: 2013.05.02 @ 14:05:15

TEST COMMENT: 30 - IF- 1/8" Blow built to 1/2"
 60 - IS- No Return
 30 - FF- No Blow
 60 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2136.47	117.02	Initial Hydro-static
1	12.97	116.36	Open To Flow (1)
31	13.30	118.87	Shut-In(1)
91	55.93	122.90	End Shut-In(1)
92	13.03	122.90	Open To Flow (2)
121	13.44	124.53	Shut-In(2)
185	31.72	127.57	End Shut-In(2)
186	2075.55	128.90	Final Hydro-static

Recovery

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

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Jeff Christian

10-1s-37w Cheyenne,KS

Patti #1-10

Job Ticket: 50717

DST#: 5

Test Start: 2013.05.02 @ 08:20:00

GENERAL INFORMATION:

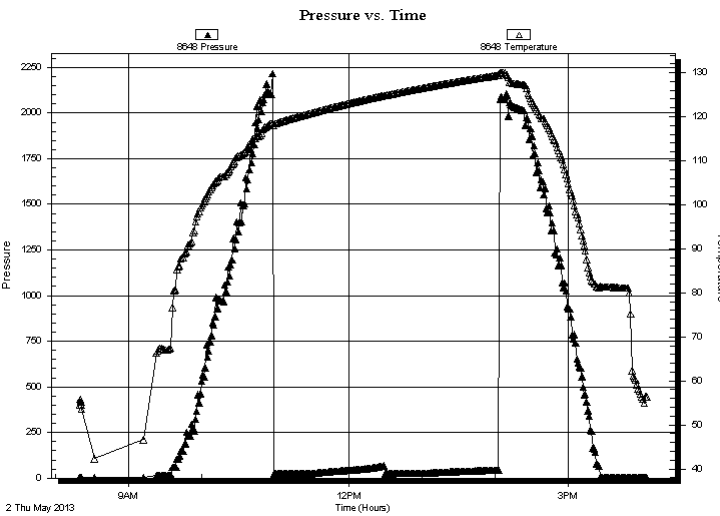
Formation: **LKC "I-J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:59:45
Time Test Ended: 16:05:45
Interval: 4314.00 ft (KB) To 4372.00 ft (KB) (TVD)
Total Depth: 4372.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 43
Reference Elevations: 3200.00 ft (KB)
3190.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8648

Inside

Press @ Run Depth: psig @ 4315.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.05.02 End Date: 2013.05.02 Last Calib.: 2013.05.02
Start Time: 08:20:05 End Time: 16:03:59 Time On Btm:
Time Off Btm:

TEST COMMENT: 30 - IF- 1/8" Blow built to 1/2"
60 - IS- No Return
30 - FF- No Blow
60 - FS- No Return



PRESSURE SUMMARY

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

Recovery

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

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50717

DST#: 5

ATTN: Jeff Christian

Test Start: 2013.05.02 @ 08:20:00

Tool Information

Drill Pipe:	Length: 3771.00 ft	Diameter: 3.80 inches	Volume: 52.90 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 55.53 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4314.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	87.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4286.00	
Shut In Tool	5.00			4291.00	
Hydraulic tool	5.00			4296.00	
Jars	5.00			4301.00	
Safety Joint	3.00			4304.00	
Packer	5.00			4309.00	29.00 Bottom Of Top Packer
Packer	5.00			4314.00	
Stubb	1.00			4315.00	
Recorder	0.00	6799	Inside	4315.00	
Recorder	0.00	8648	Inside	4315.00	
Perforations	18.00			4333.00	
Change Over Sub	1.00			4334.00	
Drill Pipe	32.00			4366.00	
Change Over Sub	1.00			4367.00	
Bullnose	5.00			4372.00	58.00 Bottom Packers & Anchor

Total Tool Length: 87.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50717

DST#: 5

ATTN: Jeff Christian

Test Start: 2013.05.02 @ 08:20:00

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: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud 100M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

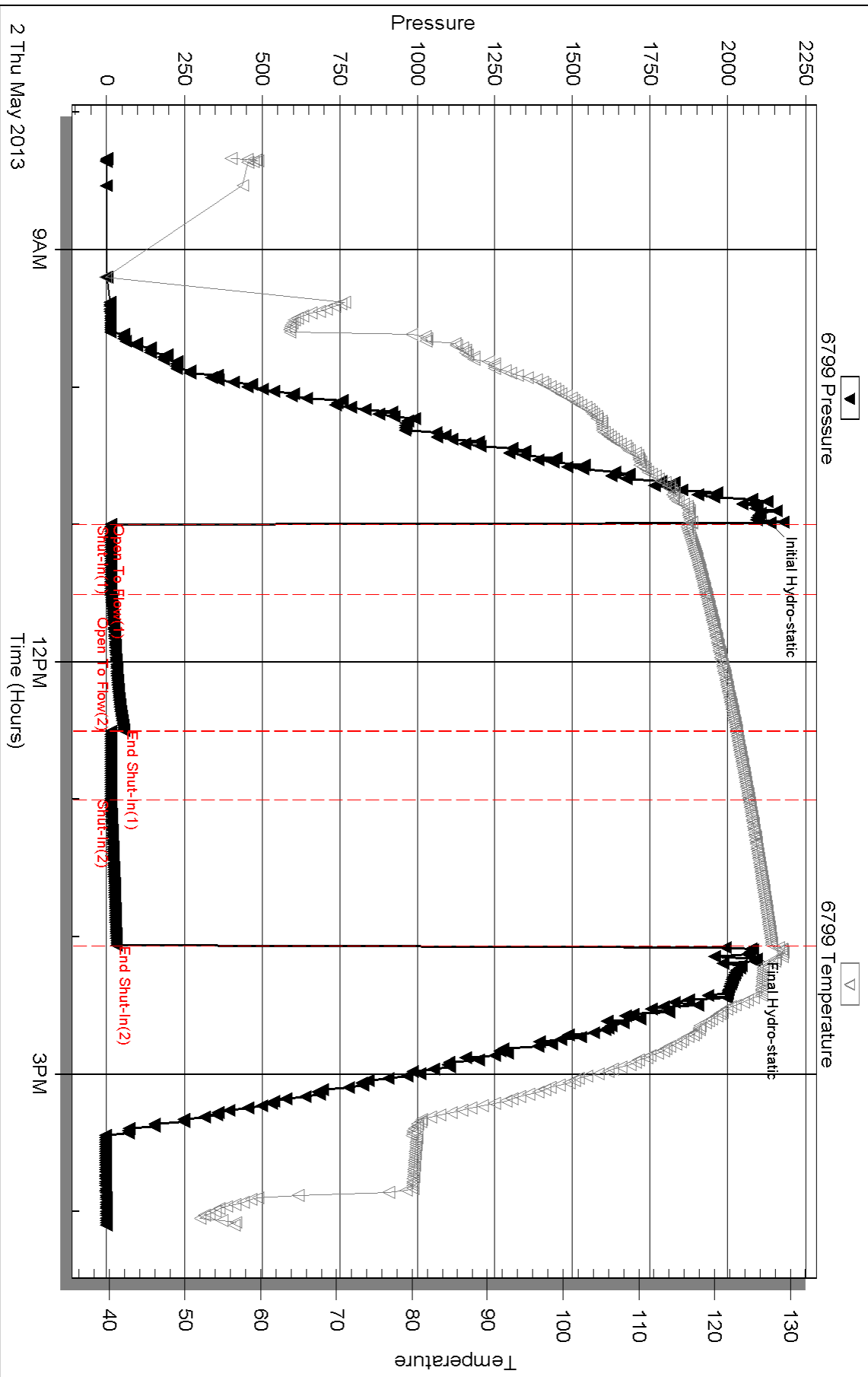
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



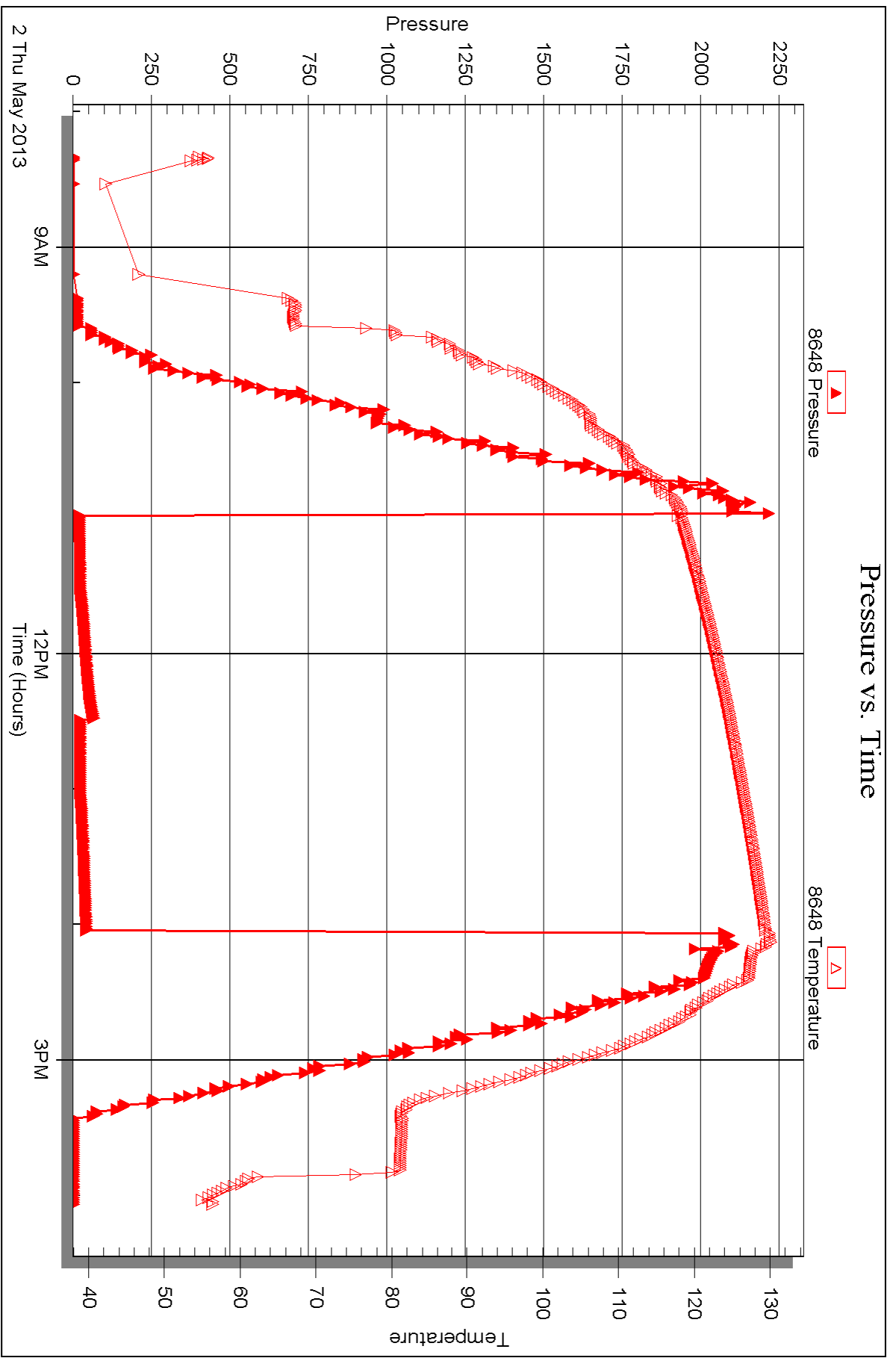
Serial #: 8648

Inside

Murfin Drilling Co., Inc.

Patti #1-10

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 50717

Printed: 2013.05.10 @ 10:46:55



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Jeff Christian

Patti #1-10

10-1s-37w Cheyenne,KS

Start Date: 2013.05.02 @ 09:59:00

End Date: 2013.05.02 @ 18:32:45

Job Ticket #: 50736 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.05.10 @ 10:46:05



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N Water STE #300
 Wichita, KS 67202
 ATTN: Jeff Christian

10-1s-37w Cheyenne, KS

Patti #1-10

Job Ticket: 50736

DST#: 6

Test Start: 2013.05.02 @ 09:59:00

GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 12:20:45
 Time Test Ended: 18:32:45
 Interval: **4519.00 ft (KB) To 4560.00 ft (KB) (TVD)**
 Total Depth: 4560.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ryan Nichols
 Unit No: 43
 Reference Elevations: 3200.00 ft (KB)
 3190.00 ft (CF)
 KB to GR/CF: 10.00 ft

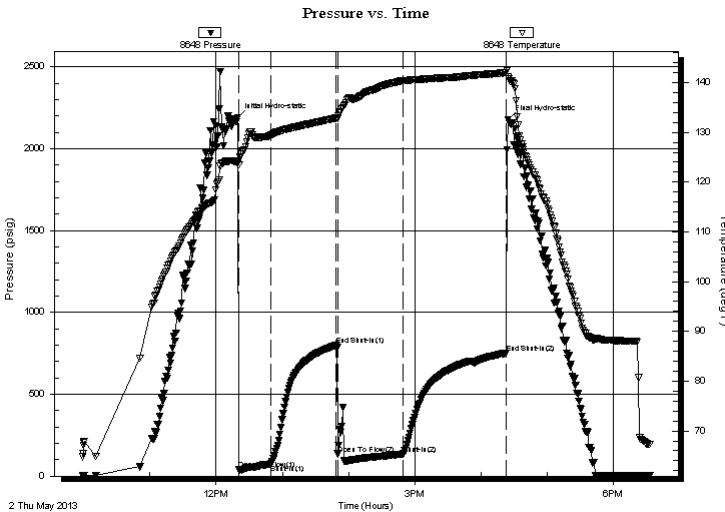
Serial #: 8648

Inside

Press @ Run Depth: 135.22 psig @ 4520.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.05.02 End Date: 2013.05.02 Last Calib.: 2013.05.03
 Start Time: 09:59:05 End Time: 18:32:45 Time On Btm: 2013.05.02 @ 12:19:45
 Time Off Btm: 2013.05.02 @ 16:24:45

TEST COMMENT: 30 IF - 1/2" blow built to BoB @ 30mins 10"
 60 ISI - Surface blow started @ 6 mins built to 1/4"
 60 FF - Surface blow built to 9 1/2"
 90 FSI - Surface blow started @ 3 mins built to 1/4"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2188.75	123.70	Initial Hydro-static
1	42.19	123.52	Open To Flow (1)
30	74.74	129.40	Shut-In(1)
89	800.17	132.88	End Shut-In(1)
91	135.74	132.71	Open To Flow (2)
150	135.22	140.37	Shut-In(2)
243	751.31	142.00	End Shut-In(2)
245	2178.50	141.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
89.00	GOWCM - 10%G - 10%W - 20%o 60%M	0.44
89.00	GOCM - 20%G - 40%o - 40%M	0.44
89.00	GMCO - 25%G - 20%M - 55%o	0.44
1.00	Oil - 100%o	0.00

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N Water STE #300
 Wichita, KS 67202
 ATTN: Jeff Christian

10-1s-37w Cheyenne,KS
Patti #1-10
 Job Ticket: 50736 **DST#: 6**
 Test Start: 2013.05.02 @ 09:59:00

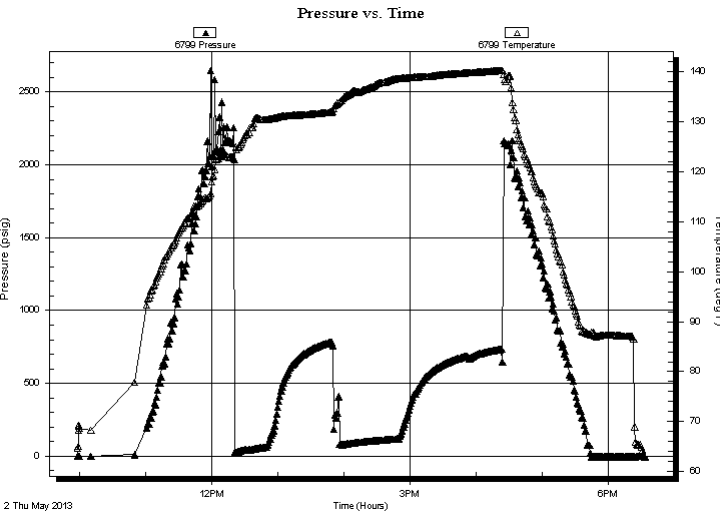
GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 12:20:45
 Time Test Ended: 18:32:45
Interval: 4519.00 ft (KB) To 4560.00 ft (KB) (TVD)
 Total Depth: 4560.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ryan Nichols
 Unit No: 43
 Reference Elevations: 3200.00 ft (KB)
 3190.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 6799 Inside

Press @ Run Depth: psig @ 4520.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.05.02 End Date: 2013.05.02 Last Calib.: 2013.05.03
 Start Time: 09:58:35 End Time: 18:34:00 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 IF - 1/2" blow built to BoB @ 30mins 10"
 60 ISI - Surface blow started @ 6 mins built to 1/4"
 60 FF - Surface blow built to 9 1/2"
 90 FSI - Surface blow started @ 3 mins built to 1/4"



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
89.00	GOWCM - 10%G - 10%W - 20%o 60%M	0.44
89.00	GOCM - 20%G - 40%o - 40%M	0.44
89.00	GMCO - 25%G - 20%M - 55%o	0.44
1.00	Oil - 100%o	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50736

DST#: 6

ATTN: Jeff Christian

Test Start: 2013.05.02 @ 09:59:00

Tool Information

Drill Pipe:	Length: 3966.00 ft	Diameter: 3.80 inches	Volume: 55.63 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 58.26 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4519.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	41.00 ft			
Tool Length:	70.00 ft			
Number of Packers:	2	Diameter: 6.25 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4491.00	
Shut In Tool	5.00			4496.00	
Hydraulic tool	5.00			4501.00	
Jars	5.00			4506.00	
Safety Joint	3.00			4509.00	
Packer	5.00			4514.00	29.00 Bottom Of Top Packer
Packer	5.00			4519.00	
Stubb	1.00			4520.00	
Recorder	0.00	6799	Inside	4520.00	
Recorder	0.00	8648	Inside	4520.00	
Perforations	35.00			4555.00	
Bullnose	5.00			4560.00	41.00 Bottom Packers & Anchor

Total Tool Length: 70.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

10-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Patti #1-10

Job Ticket: 50736

DST#: 6

ATTN: Jeff Christian

Test Start: 2013.05.02 @ 09:59:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 75.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
89.00	GOWCM - 10%G - 10%W - 20%o 60%M	0.438
89.00	GOCM - 20%G - 40%o - 40%M	0.438
89.00	GMCO - 25%G - 20%M - 55%o	0.438
1.00	Oil - 100%o	0.005

Total Length: 268.00 ft Total Volume: 1.319 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

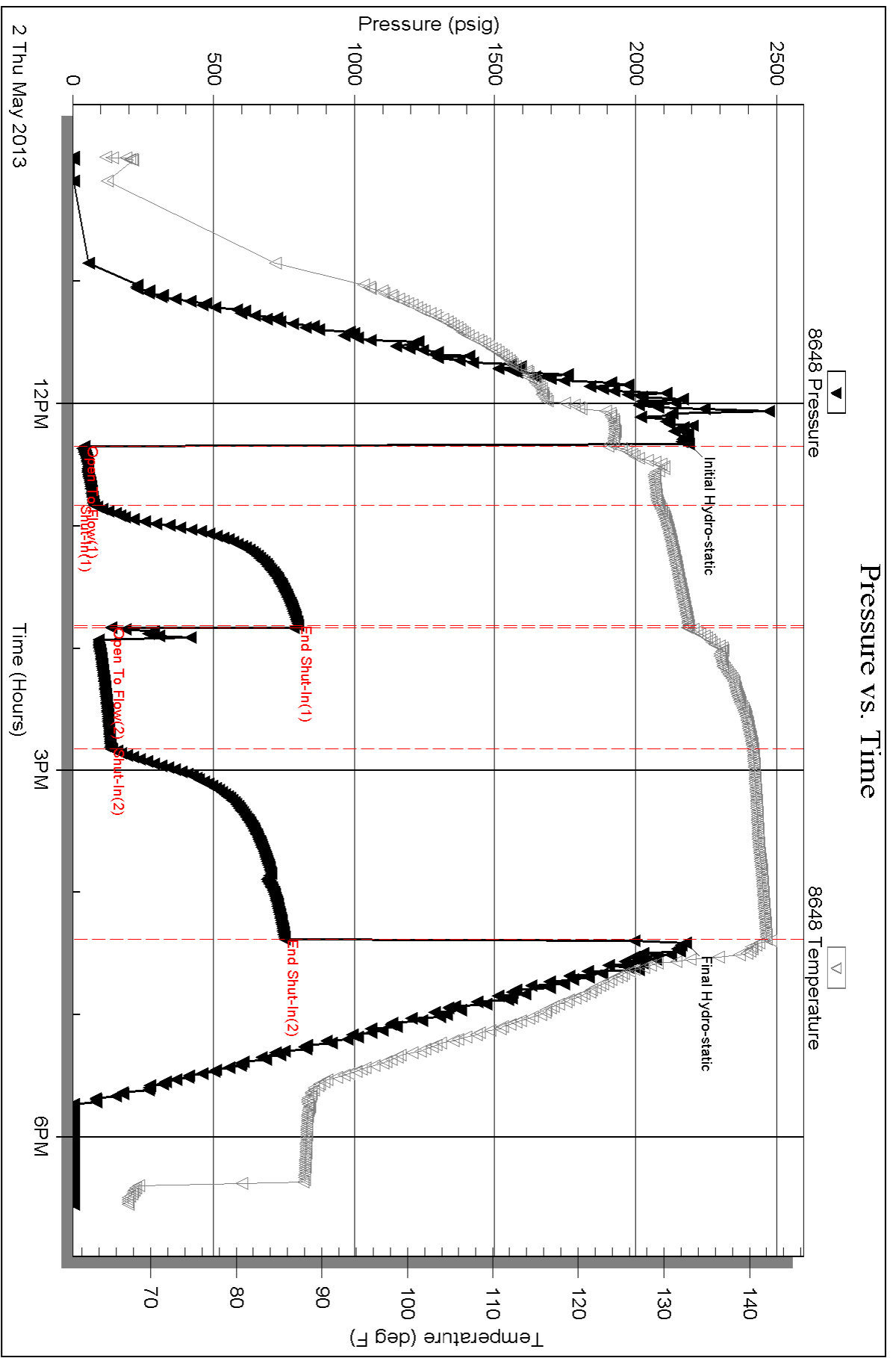
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 361' GIP

Oil API = 36 @ 50 Deg. F = 37 COR 60 Deg F



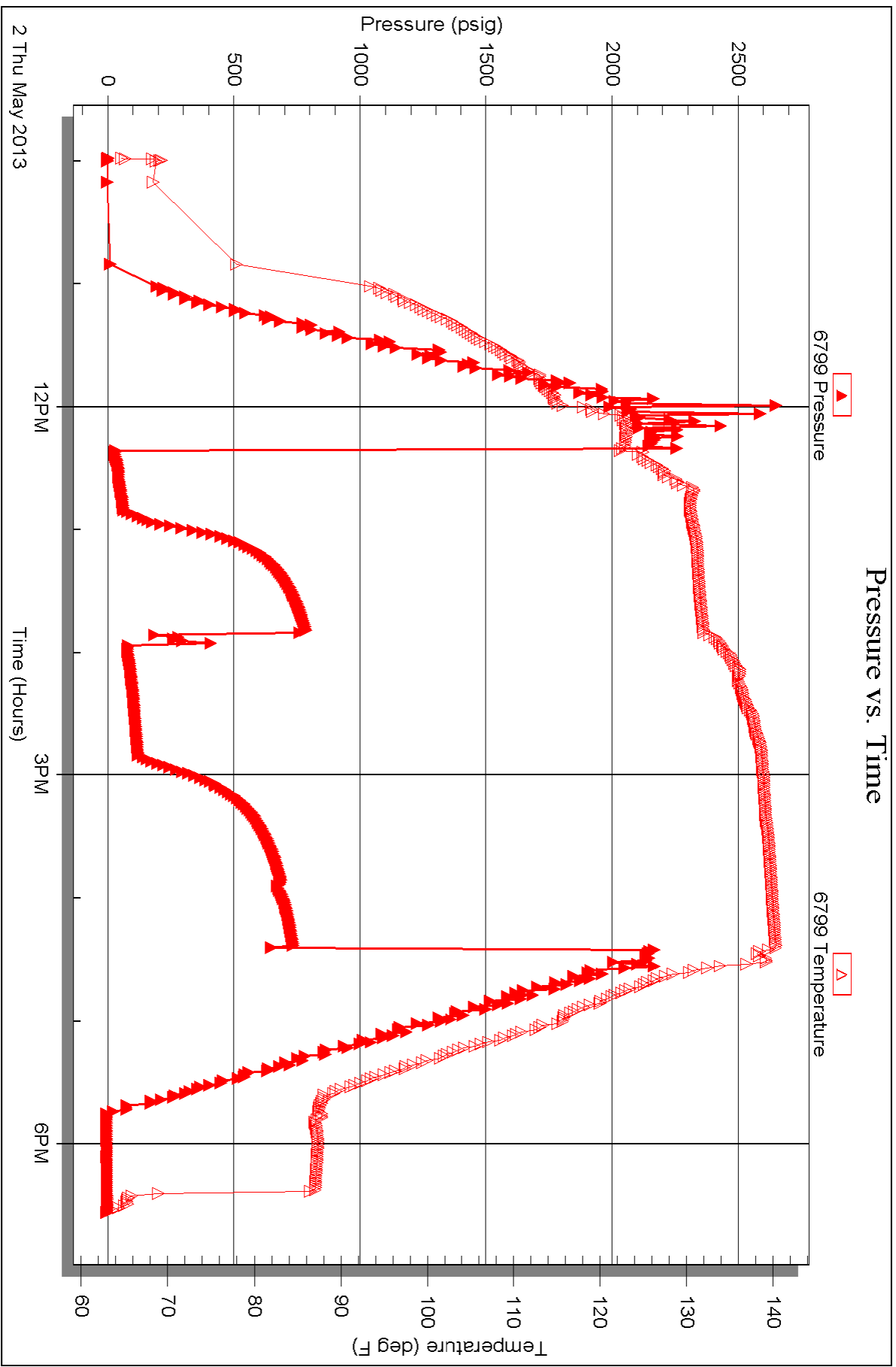
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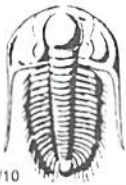
Inside

Murfin Drilling Co., Inc.

Patti #1-10

DST Test Number: 6





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

19148

NO. 50713

Well Name & No. Patti #1-10 Test No. 1 Date 4-28-13
 Company Murkin Drilling Co., Inc. Elevation 3200 KB 3190 GL
 Address 250 N Water STE #3000 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murkin #14
 Location: Sec. 10 Twp. 1S Rge. 37W Co. Chexenge State KS

Interval Tested 3680-3722 Zone Tested Foraker
 Anchor Length 42' Drill Pipe Run 3140 Mud Wt. 8.8
 Top Packer Depth 7676 Drill Collars Run 534' Vis 56
 Bottom Packer Depth 3680 Wt. Pipe Run 0 WL 5.6
 Total Depth 3722 Chlorides 800 ppm System LCM 6#

Blow Description IF - Surface Blow built to 1/8" then died back to weak surface
ISI - NO Return Blow
FF - NO Blow
FSL - NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>190</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

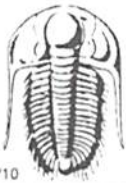
Rec Total 190 BHT 124 Gravity - API RW - @ - ° F Chlorides - ppm
 (A) Initial Hydrostatic 1740 Test 1150 T-On Location 11:00 AM
 (B) First Initial Flow 123 Jars 250 T-Started 1:10 PM
 (C) First Final Flow 124 Safety Joint 75 T-Open 4:00 PM
 (D) Initial Shut-In 754 Circ Sub NIC T-Pulled 7:00 PM
 (E) Second Initial Flow 123 Hourly Standby X1 100 T-Out 9:30 PM
 (F) Second Final Flow 125 Mileage 136 RT 210.80
 (G) Final Shut-In 601 Sampler
 (H) Final Hydrostatic 1772 Straddle

Initial Open 30 Shale Packer
 Initial Shut-In 60 Extra Packer
 Final Flow 30 Extra Recorder
 Final Shut-In 60 Day Standby
 Accessibility
 Sub Total 1785.80

Comments I was told this rig would be out by noon. Short trip was longer than expected. I was not called. Hole had approx 10' OF fill
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1785.80
 MP/DST Disc't

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50714

Well Name & No. Patti #1-10 Test No. 2 Date 4-29-13
 Company Murfin Drilling Co, Inc. Elevation 3200 KB 3190 GL
 Address 2500 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin #14
 Location: Sec. 10 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4018-4080 Zone Tested Oread
 Anchor Length 62 Drill Pipe Run 3486' Mud Wt. 8.9
 Top Packer Depth 4014 Drill Collars Run 534' Vis 63
 Bottom Packer Depth 4018 Wt. Pipe Run 0 WL 6.8
 Total Depth 4080 Chlorides 600 ppm System LCM 6#

Blow Description IF - Surface Blow built to 1/8" then died in 25 min.
ISI - NO Return
FF - NO Blow
FSL - NO Return

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

Rec Total 5 BHT 131 Gravity - API RW - @ - ° F Chlorides - ppm

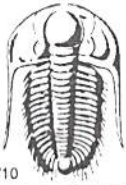
(A) Initial Hydrostatic	<u>1970</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>9:50 PM</u>
(B) First Initial Flow	<u>14</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>10:20 PM</u>
(C) First Final Flow	<u>21</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>12:35 AM</u>
(D) Initial Shut-In	<u>800</u>	<input checked="" type="checkbox"/> Circ Sub	<u>NIC</u>	T-Pulled	<u>3:35 AM</u>
(E) Second Initial Flow	<u>19</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>5:30 AM</u>
(F) Second Final Flow	<u>22</u>	<input checked="" type="checkbox"/> Mileage	<u>136 RT</u> 210.80	Comments	
(G) Final Shut-In	<u>939</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2056</u>	<input type="checkbox"/> Straddle			

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

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1785.80
 MP/DST Disc't _____
 Sub Total 1785.80

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **50715**

4/10

Well Name & No. Patti # H08 Test No. 3 Date 4-30-13
 Company Murrin Drilling, Co. Inc. Elevation 3200 KB 3190 GL
 Address 250 N Water STE #300D Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murrin #14
 Location: Sec. 10 Twp. 1S Rge. 37W Co. Cheyenne State Ks

Interval Tested 4092-4221 Zone Tested LKC "A-D"
 Anchor Length 129' Drill Pipe Run 3550 Mud Wt. 9.4
 Top Packer Depth 4088 Drill Collars Run 534' Vis 120
 Bottom Packer Depth 4092 Wt. Pipe Run 0 WL 8.4
 Total Depth 4221 Chlorides 6000 ppm System LCM 5#

Blow Description IF - BoB in 28 min
ISI - No Return
FF - Blow started at 2 min. BoB in 32 min.
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>280</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	
<u>180</u>	<u>OCWM</u>	<u>10</u>	<u>30</u>	<u>60</u>	
<u>180</u>	<u>OCWM</u>	<u>10</u>	<u>40</u>	<u>50</u>	
<u>90</u>	<u>OCMW</u>	<u>5</u>	<u>65</u>	<u>30</u>	

Rec Total 730 BHT 135 Gravity - API RW .98 @ 66 °F Chlorides 7,500 ppm

(A) Initial Hydrostatic 1981
 (B) First Initial Flow 64
 (C) First Final Flow 207
 (D) Initial Shut-In 1208
 (E) Second Initial Flow 211
 (F) Second Final Flow 349
 (G) Final Shut-In 1283
 (H) Final Hydrostatic 1936

Test 1250
 Jars 250
 Safety Joint 75
 Circ Sub NIC

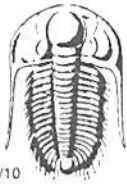
T-On Location 6:30 PM
 T-Started 6:55 PM
 T-Open 10:20 PM
 T-Pulled 2:20 AM
 T-Out 5:10 AM

Hourly Standby
 Mileage 136 RT 210.80
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1785.80

Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1785.80
 MP/DST Disc't _____

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50716

Well Name & No. Patti #110 Test No. 4 Date 5-1-13
 Company Murfin Drilling Co., Inc. Elevation 3200 KB 3190 GL
 Address 250 N Wacker STE #300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin #14
 Location: Sec. 10 Twp. 15 Rge. 37W Co. Cheyenne State KS

Interval Tested 4233-4278 Zone Tested LKC "G"
 Anchor Length 45' Drill Pipe Run 3675 Mud Wt. 9.8
 Top Packer Depth 4229 Drill Collars Run 534' Vis 67
 Bottom Packer Depth 4233 Wt. Pipe Run Ø WL 5.6
 Total Depth 4278 Chlorides 8000 ppm System LCM 6#

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

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>OSM</u>	<u>spds</u>		<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 127° Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic	<u>2101</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>1:30 PM</u>
(B) First Initial Flow	<u>15</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>1:42 PM</u>
(C) First Final Flow	<u>17</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>4:00 PM</u>
(D) Initial Shut-In	<u>34</u>	<input checked="" type="checkbox"/> Circ Sub	<u>N/C</u>	T-Pulled	<u>7:00 PM</u>
(E) Second Initial Flow	<u>17</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>8:55 PM</u>
(F) Second Final Flow	<u>17</u>	<input checked="" type="checkbox"/> Mileage	<u>136 RT</u>	Comments	
(G) Final Shut-In	<u>27</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2064</u>	<input type="checkbox"/> Straddle			

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

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1785.80
 MP/DST Disc't _____

Sub Total 1785.80

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50717

Well Name & No. Patti #1-10 Test No. 5 Date 5-2-13
 Company Murfin Drilling Co., Inc. Elevation 3200 KB 3190 GL
 Address 250 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. JEFF Christian Rig Murfin #14
 Location: Sec. 10 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4314-4372 Zone Tested LKC "I-J"
 Anchor Length 58 Drill Pipe Run 3771 Mud Wt. 9.0
 Top Packer Depth 4310 Drill Collars Run 534 Vis 67
 Bottom Packer Depth 4314 Wt. Pipe Run 0 WL 5.6
 Total Depth 4372 Chlorides 800 ppm System LCM 6#

Blow Description IF - 1/8" Blow built to 1/2"
ISI - NO Return
FF - NO Blow
FSI - NO Return

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

Rec Total 5 BHT 1280 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic	<u>2136</u>
(B) First Initial Flow	<u>12</u>
(C) First Final Flow	<u>13</u>
(D) Initial Shut-In	<u>55</u>
(E) Second Initial Flow	<u>13</u>
(F) Second Final Flow	<u>13</u>
(G) Final Shut-In	<u>31</u>
(H) Final Hydrostatic	<u>2075</u>
Initial Open	<u>30</u>
Initial Shut-In	<u>60</u>
Final Flow	<u>30</u>
Final Shut-In	<u>60</u>

Test 1250
 Jars 250
 Safety Joint 75
 Circ Sub N/C
 Hourly Standby
 Mileage 136 RT 210.80
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1785.80

T-On Location 8:00 AM
 T-Started 8:20 AM
 T-Open 11:00 AM
 T-Pulled 2:00 PM
 T-Out 4:15 PM
 Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1785.80
 MP/DST Disc't _____

Approved By _____ Our Representative 

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50718

Well Name & No. Patti # ~~0000~~ 2-10 Test No. 6 Date 5/3/13
 Company Murfin Drilling Co. Elevation 3200 KB 3190 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin # 14
 Location: Sec. 10 Twp. 15 Rge. 37W Co. Dundy State NE

Interval Tested 4519-4560 Zone Tested Pawnee
 Anchor Length 41' Drill Pipe Run _____ Mud Wt. 9.1
 Top Packer Depth 4514 Drill Collars Run 534' Vis 75
 Bottom Packer Depth 4519 Wt. Pipe Run 0' WL 5.6
 Total Depth 4560 Chlorides 800 ppm System LCM 5
 Blow Description IF - 1/2" blow built to BOB @ 30 mins 10"
ISI - Surface blow started @ 6 mins built to 1/4"
FF - Surface blow built to 9 1/2"
FSI - Surface blow started @ 3 mins built to

Rec	Feet of	%gas	%oil	%water	%mud
1	Oil	100			
89	GMCO	25	55	20	
89	60CM	20	40	40	
89	GOWCM	10	20	10	60

Rec Total 268' BHT 142° Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2189 Test 1250 T-On Location 09:30
 (B) First Initial Flow 42 Jars 250 T-Started 09:59
 (C) First Final Flow 75 Safety Joint 75 T-Open 12:21
 (D) Initial Shut-In 802 Circ Sub NC T-Pulled 16:21
 (E) Second Initial Flow 136 Hourly Standby _____ T-Out 17:35
 (F) Second Final Flow 135 Mileage 136 RT 210.80 Comments 361' GIP
 (G) Final Shut-In 751 Sampler _____
 (H) Final Hydrostatic 2179 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1785.80
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1785.80

Approved By _____ Our Representative [Signature]
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