



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

Theron #4-10

10-1s-37w Cheyenne,KS

Start Date: 2015.03.26 @ 01:11:00

End Date: 2015.03.26 @ 08:56:30

Job Ticket #: 62202 DST #: 1

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

Printed: 2015.03.31 @ 16:17:36



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc.

10-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Theron #4-10

Job Ticket: 62202

DST#: 1

ATTN: Robert Hendrix

Test Start: 2015.03.26 @ 01:11:00

GENERAL INFORMATION:

Formation: **Foraker**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:07:00

Time Test Ended: 08:56:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 83

Interval: 3700.00 ft (KB) To 3747.00 ft (KB) (TVD)

Reference Elevations: 3227.00 ft (KB)

Total Depth: 3747.00 ft (KB) (TVD)

3216.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8366 Outside

Press@RunDepth: 49.01 psig @ 3701.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.03.26

End Date: 2015.03.26

Last Calib.: 2015.03.26

Start Time: 01:11:05

End Time: 08:56:29

Time On Btm: 2015.03.26 @ 03:06:30

Time Off Btm: 2015.03.26 @ 07:09:45

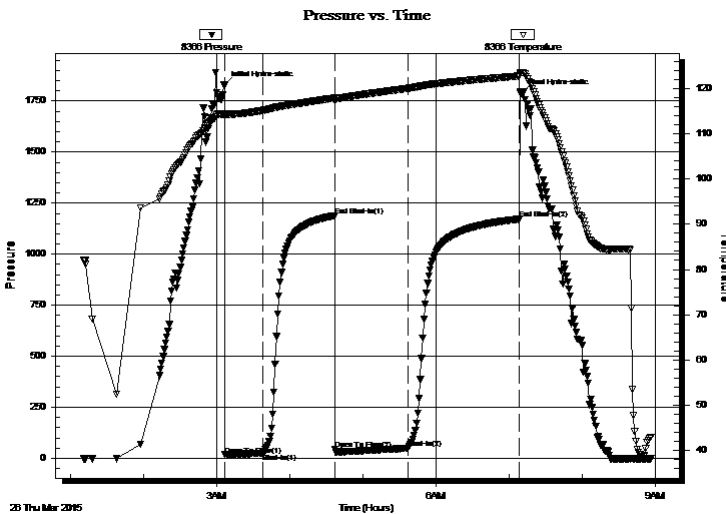
TEST COMMENT: 30 - IF - Weak surface blow built to 3 1/4" in 30 min. (In Diesel)

60 - ISI - No return

60 - FF - Weak surface blow built to 3 3/4" in 60 min.

90 - FSI - No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1828.41	114.39	Initial Hydro-static
1	16.41	113.92	Open To Flow (1)
32	25.48	115.09	Shut-In(1)
91	1188.79	117.84	End Shut-In(1)
91	42.45	117.26	Open To Flow (2)
151	49.01	119.97	Shut-In(2)
242	1171.44	122.70	End Shut-In(2)
244	1786.27	123.40	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
29.00	MCO - 35M - 65o	0.14
37.00	Free oil	0.18

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

Theron #4-10

Job Ticket: 62202

DST#: 1

ATTN: Robert Hendrix

Test Start: 2015.03.26 @ 01:11:00

Tool Information

Drill Pipe:	Length: 3471.16 ft	Diameter: 3.80 inches	Volume: 48.69 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: 205.92 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 49.70 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.08 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	3700.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	47.00 ft			
Tool Length:	75.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3677.00	
Hydraulic tool	5.00			3682.00	
Jars	5.00			3687.00	
Safety Joint	3.00			3690.00	
Packer	5.00			3695.00	28.00 Bottom Of Top Packer
Packer	5.00			3700.00	
Stubb	1.00			3701.00	
Recorder	0.00	8791	Inside	3701.00	
Recorder	0.00	8366	Outside	3701.00	
Perforations	10.00			3711.00	
change Over Sub	1.00			3712.00	
drill Pipe	31.00			3743.00	
change Over Sub	1.00			3744.00	
Bullnose	3.00			3747.00	47.00 Bottom Packers & Anchor

Total Tool Length: 75.00



**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

Theron #4-10

Job Ticket: 62202

DST#: 1

ATTN: Robert Hendrix

Test Start: 2015.03.26 @ 01:11:00

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: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 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
29.00	MCO - 35M - 65o	0.143
37.00	Free oil	0.182

Total Length: 66.00 ft Total Volume: 0.325 bbl

Num Fluid Samples: 0

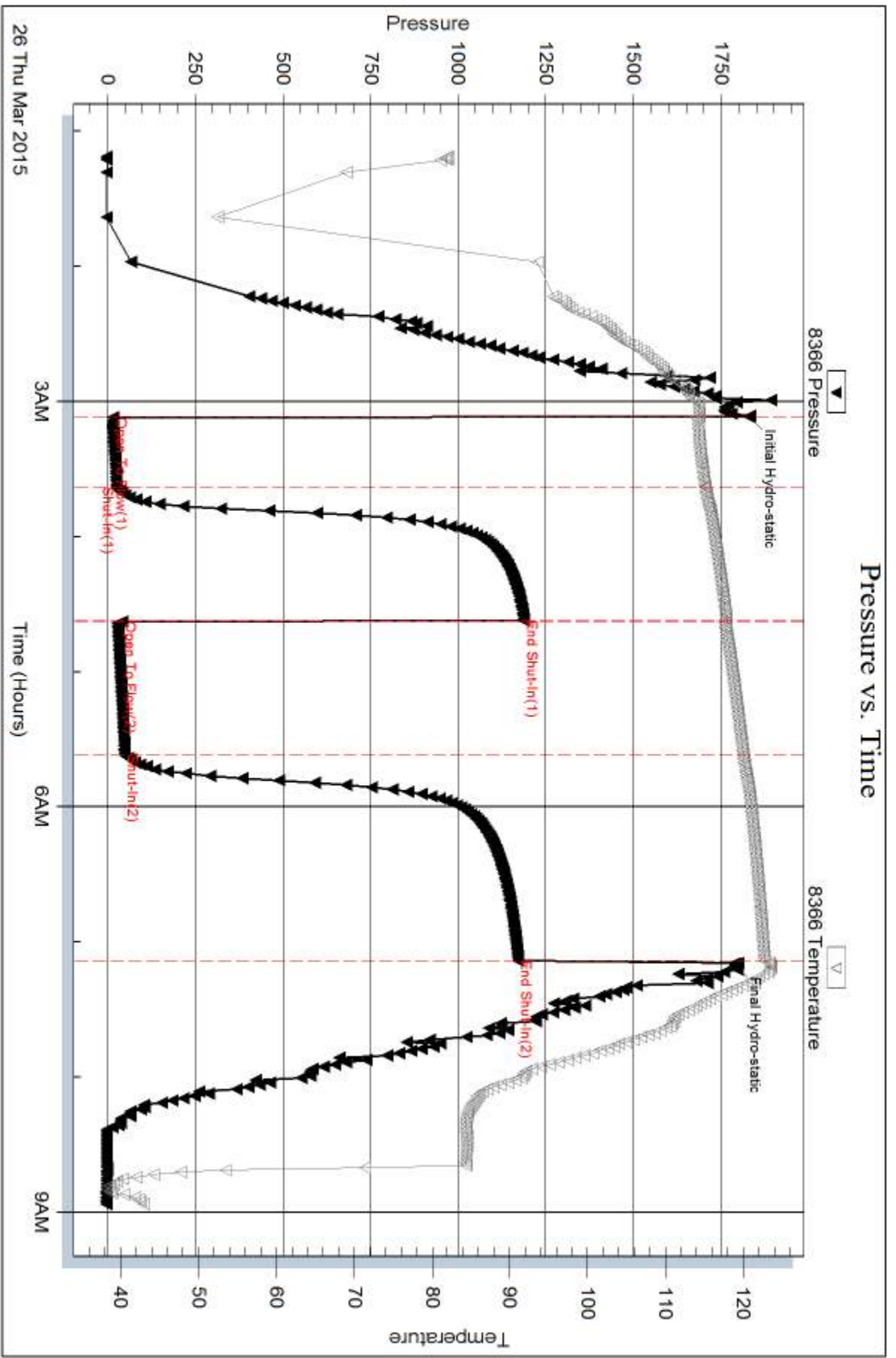
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 28 Gravity



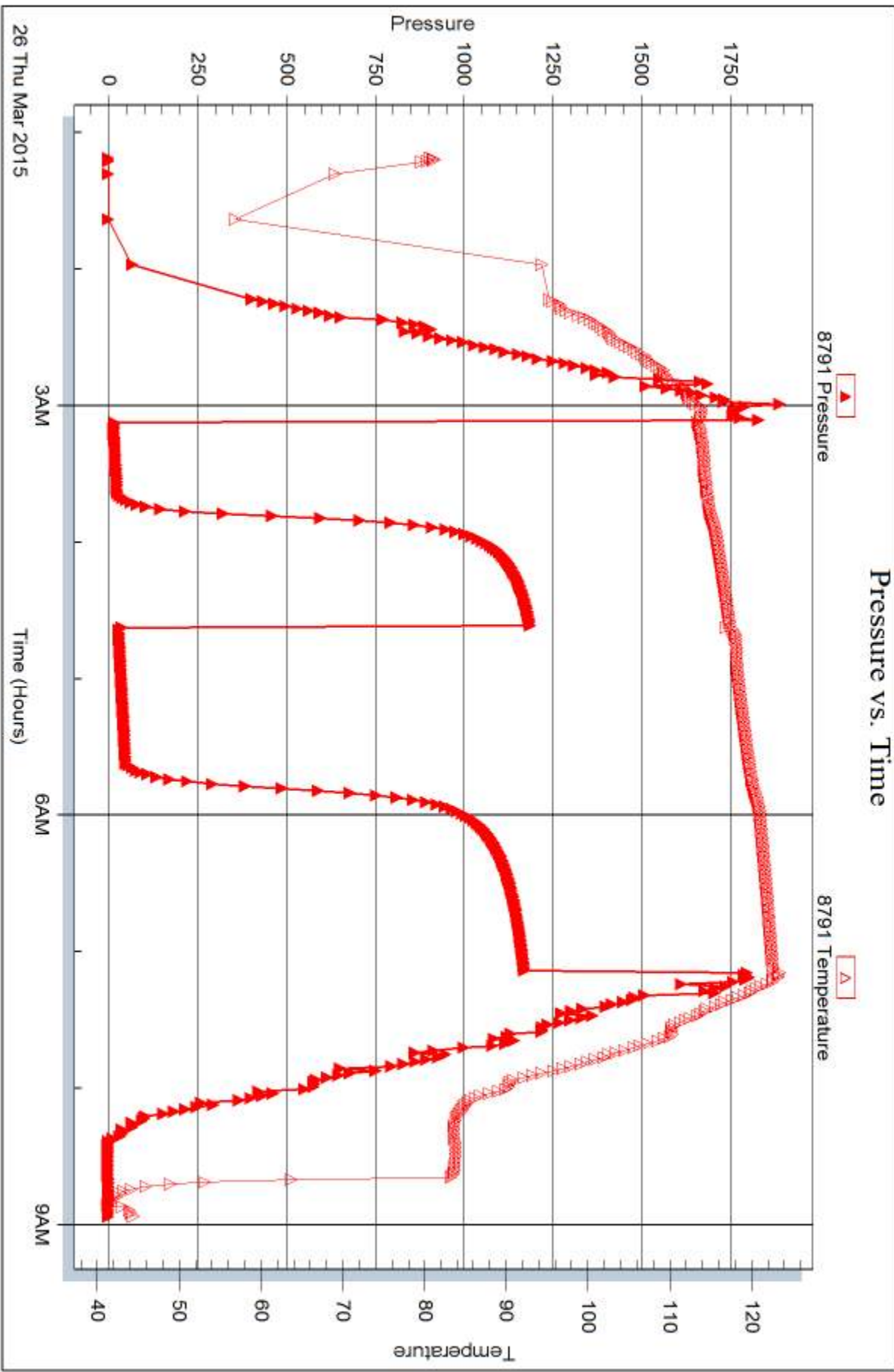
Serial #: 8791

Inside

Murfin Drilling Co Inc.

Theron #4-10

DST Test Number: 1





DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

Theron #4-10

10-1s-37w Cheyenne,KS

Start Date: 2015.03.28 @ 01:04:00

End Date: 2015.03.28 @ 09:11:45

Job Ticket #: 65026 DST #: 2

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

Printed: 2015.03.31 @ 16:17:15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc.

10-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Theron #4-10

Job Ticket: 65026

DST#: 2

ATTN: Robert Hendrix

Test Start: 2015.03.28 @ 01:04:00

GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:11:00

Time Test Ended: 09:11:45

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4173.00 ft (KB) To 4240.00 ft (KB) (TVD)

Reference Elevations: 3227.00 ft (KB)

Total Depth: 4240.00 ft (KB) (TVD)

3216.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8791

Inside

Press@RunDepth: 69.55 psig @ 4174.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.03.28

End Date:

2015.03.28

Last Calib.:

2015.03.28

Start Time: 01:04:05

End Time:

09:11:44

Time On Btm:

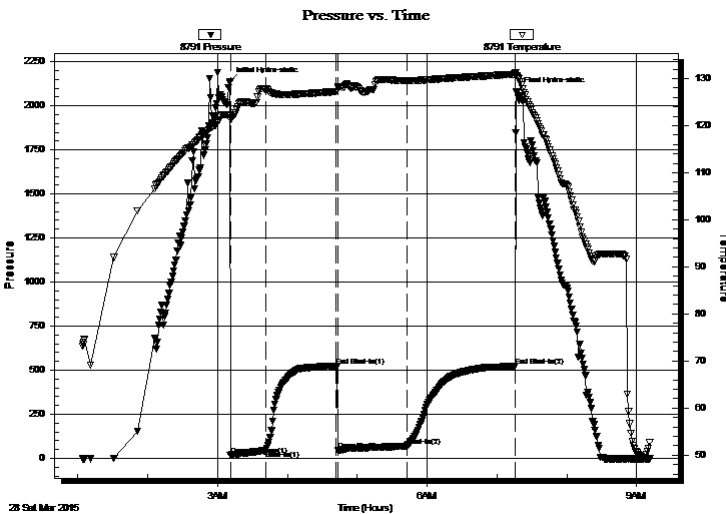
2015.03.28 @ 03:10:45

Time Off Btm:

2015.03.28 @ 07:17:00

TEST COMMENT: 30 - IF: 1/4" Blow at open, built to 3"
60 - IS: No blow back
60 - FF: Surface blow started at 14 min., built to just over 1"
90 - FS: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2136.74	122.14	Initial Hydro-static
1	17.26	121.22	Open To Flow (1)
31	43.48	127.78	Shut-In(1)
92	524.08	127.23	End Shut-In(1)
93	44.73	128.22	Open To Flow (2)
152	69.55	129.58	Shut-In(2)
245	521.17	130.94	End Shut-In(2)
247	2081.33	130.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	SOWCM 84% <i>m</i> , 7% <i>w</i> , 5% <i>g</i> , 4% <i>o</i>	0.30
15.00	OCM 88% <i>m</i> , 12% <i>o</i>	0.07
45.00	MCO 90% <i>o</i> , 10% <i>m</i>	0.22

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.

10-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Theron #4-10

Job Ticket: 65026

DST#: 2

ATTN: Robert Hendrix

Test Start: 2015.03.28 @ 01:04:00

Tool Information

Drill Pipe:	Length: 3944.00 ft	Diameter: 3.80 inches	Volume: 55.32 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: 206.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 56.33 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4173.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	67.00 ft			
Tool Length:	95.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4150.00	
Hydraulic tool	5.00			4155.00	
Jars	5.00			4160.00	
Safety Joint	3.00			4163.00	
Packer	5.00			4168.00	28.00 Bottom Of Top Packer
Packer	5.00			4173.00	
Stubb	1.00			4174.00	
Recorder	0.00	8791	Inside	4174.00	
Recorder	0.00	8366	Outside	4174.00	
Perforations	30.00			4204.00	
change Over Sub	1.00			4205.00	
drill Pipe	31.00			4236.00	
change Over Sub	1.00			4237.00	
Bullnose	3.00			4240.00	67.00 Bottom Packers & Anchor

Total Tool Length: 95.00



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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

Theron #4-10

Job Ticket: 65026

DST#: 2

ATTN: Robert Hendrix

Test Start: 2015.03.28 @ 01:04:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

23.4 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 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
60.00	SOWCM 84%m, 7%w, 5%g, 4%o	0.295
15.00	OCM 88%m, 12%o	0.074
45.00	MCO 90%o, 10%m	0.221

Total Length: 120.00 ft Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

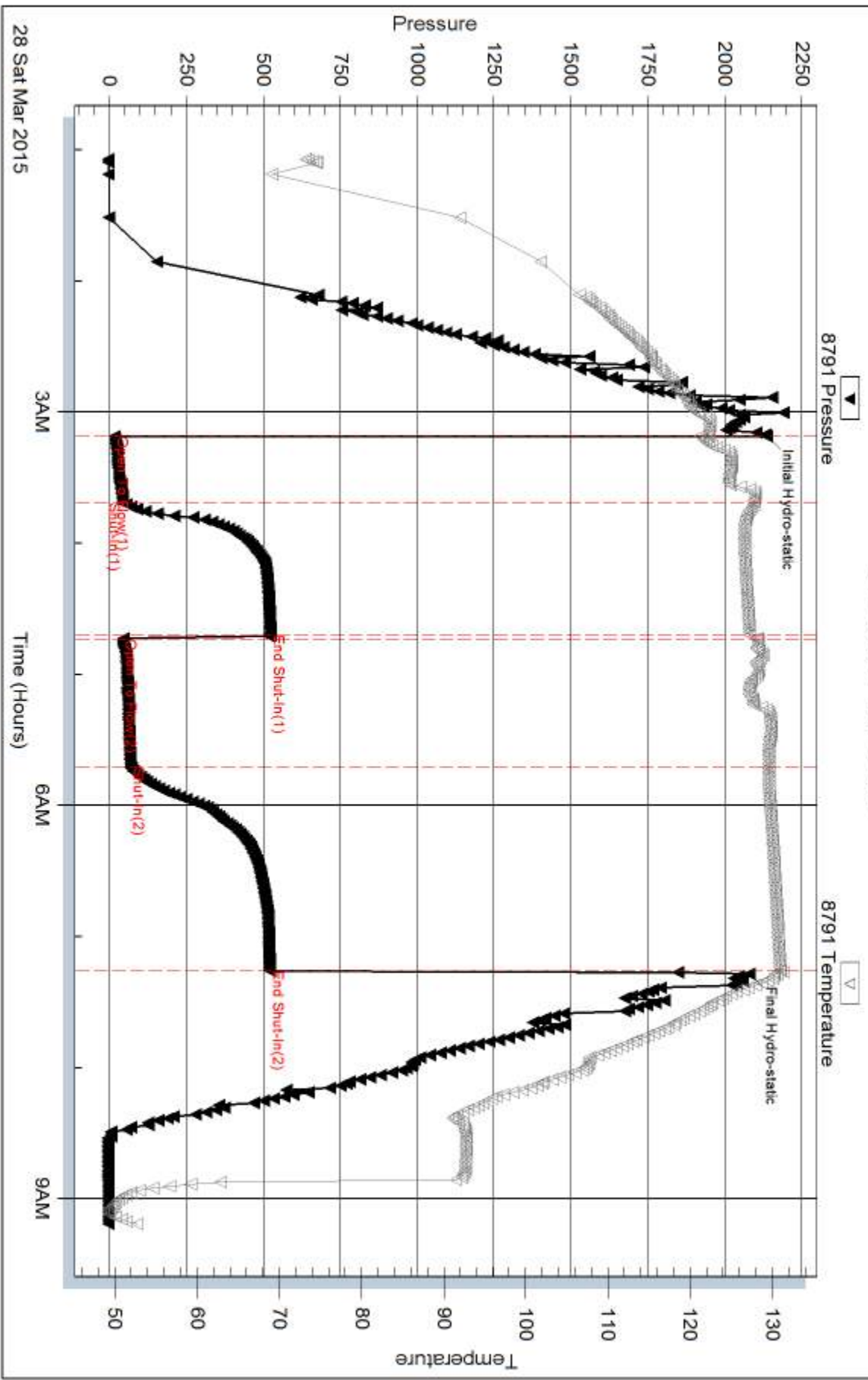
Serial #:

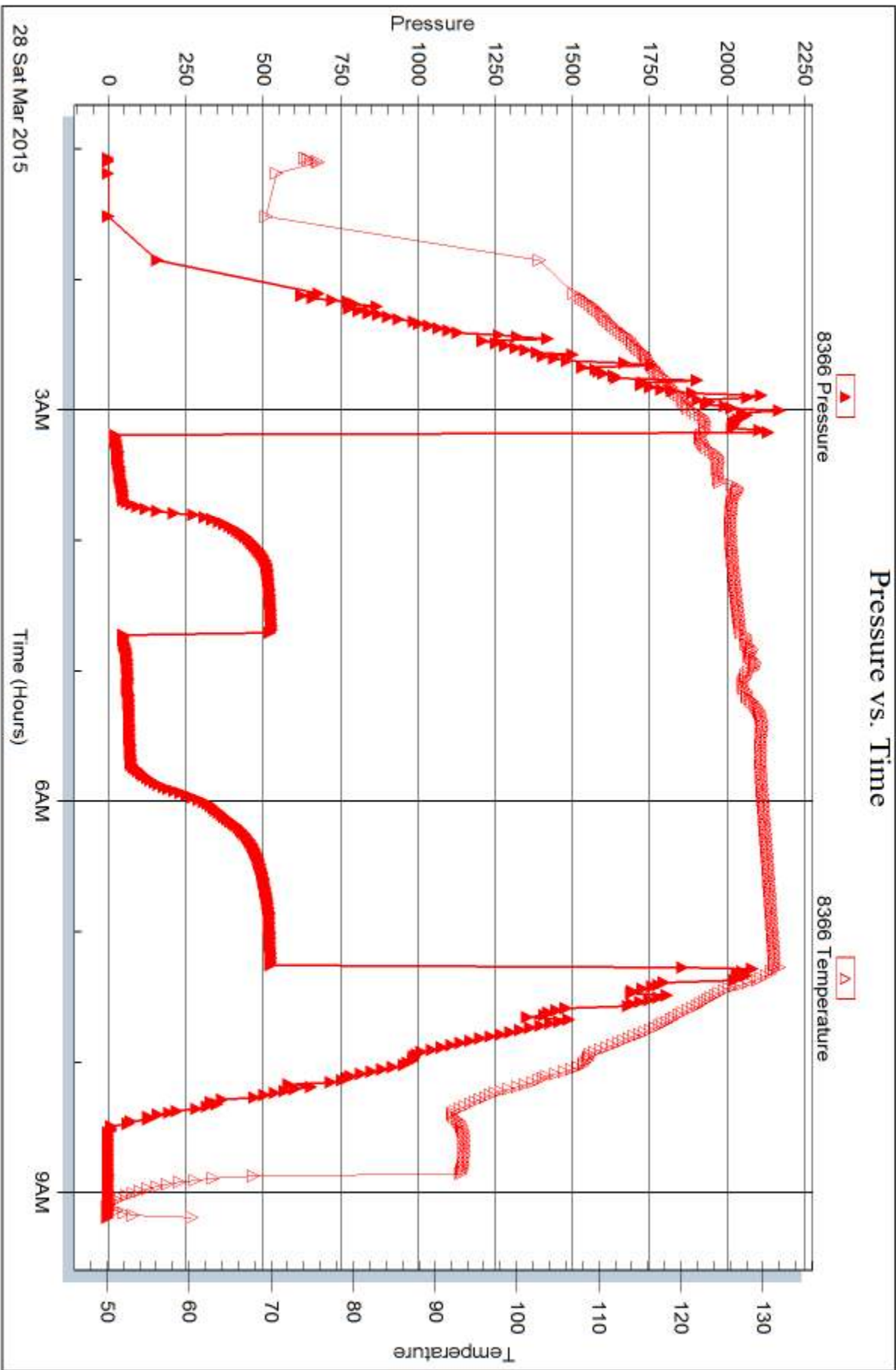
Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 23.6 api @ 60.2 deg F

Pressure vs. Time







DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

Theron #4-10

10-1s-37w Cheyenne,KS

Start Date: 2015.03.28 @ 19:05:00

End Date: 2015.03.29 @ 01:56:30

Job Ticket #: 65027 DST #: 3

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

Printed: 2015.04.01 @ 10:41:45



**TRILOBITE
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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

Theron #4-10

Job Ticket: 65027

DST#: 3

ATTN: Robert Hendrix

Test Start: 2015.03.28 @ 19:05:00

GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:03:45

Time Test Ended: 01:56:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4247.00 ft (KB) To 4303.00 ft (KB) (TVD)

Reference Elevations: 3227.00 ft (KB)

Total Depth: 4303.00 ft (KB) (TVD)

3216.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8791

Inside

Press@RunDepth: 18.15 psig @ 4248.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.03.28

End Date:

2015.03.29

Last Calib.:

2015.03.29

Start Time:

19:05:05

End Time:

01:56:29

Time On Btm:

2015.03.28 @ 21:03:30

Time Off Btm:

2015.03.29 @ 00:06:00

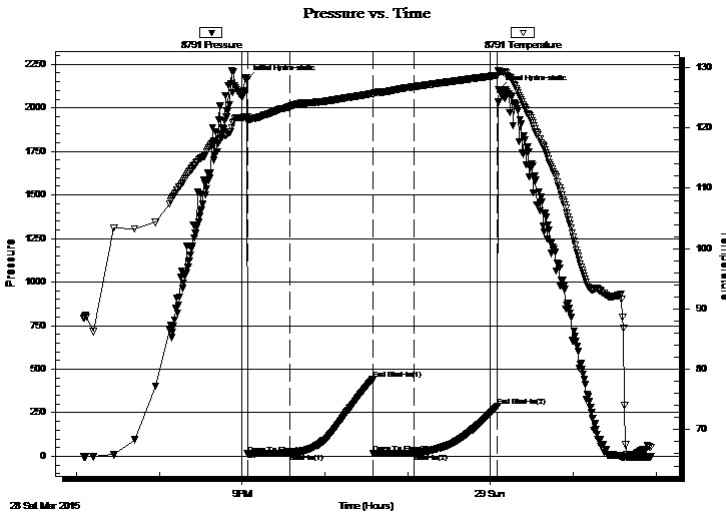
TEST COMMENT: 30 - IF: Weak surface blow, dead at 11 min.

60 - IS: No blow

30 - FF: No blow

60 - FS: No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2161.19	121.84	Initial Hydro-static
1	14.41	121.14	Open To Flow (1)
31	16.22	123.52	Shut-In(1)
91	440.75	125.70	End Shut-In(1)
92	16.36	125.56	Open To Flow (2)
121	18.15	126.82	Shut-In(2)
182	287.06	128.72	End Shut-In(2)
183	2105.64	129.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w/oil spots 98%m, 2%o	0.05

* Recovery from multiple tests

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

Theron #4-10

Job Ticket: 65027

DST#: 3

ATTN: Robert Hendrix

Test Start: 2015.03.28 @ 19:05:00

Tool Information

Drill Pipe:	Length: 4038.00 ft	Diameter: 3.80 inches	Volume: 56.64 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: 206.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 57.65 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4247.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	56.00 ft			
Tool Length:	84.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4224.00	
Hydraulic tool	5.00			4229.00	
Jars	5.00			4234.00	
Safety Joint	3.00			4237.00	
Packer	5.00			4242.00	28.00 Bottom Of Top Packer
Packer	5.00			4247.00	
Stubb	1.00			4248.00	
Recorder	0.00	8791	Inside	4248.00	
Recorder	0.00	8366	Outside	4248.00	
Perforations	19.00			4267.00	
change Over Sub	1.00			4268.00	
drill Pipe	31.00			4299.00	
change Over Sub	1.00			4300.00	
Bullnose	3.00			4303.00	56.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**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

Theron #4-10

Job Ticket: 65027

DST#: 3

ATTN: Robert Hendrix

Test Start: 2015.03.28 @ 19:05:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
10.00	Mud w /oil spots 98%m, 2%o	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

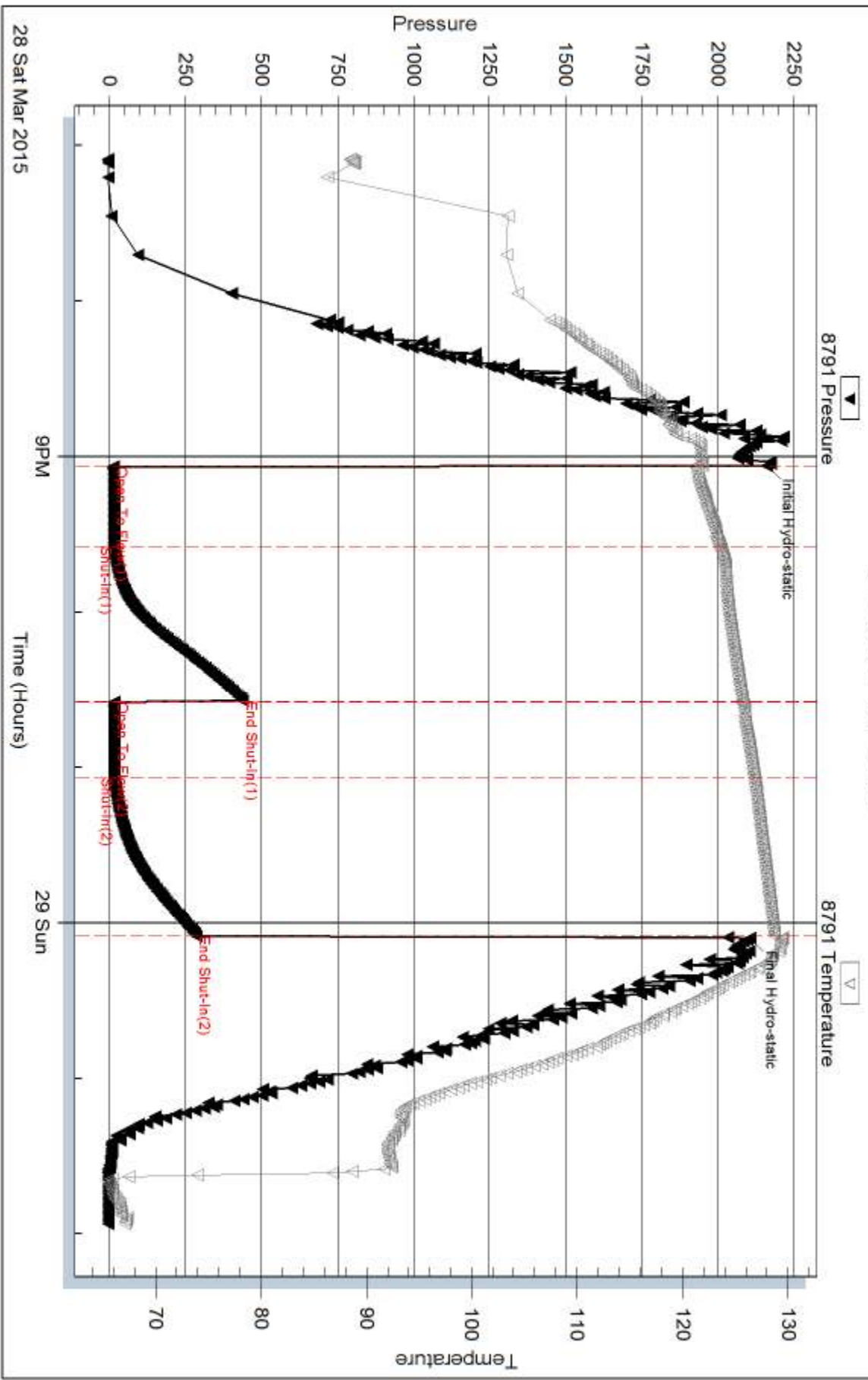
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

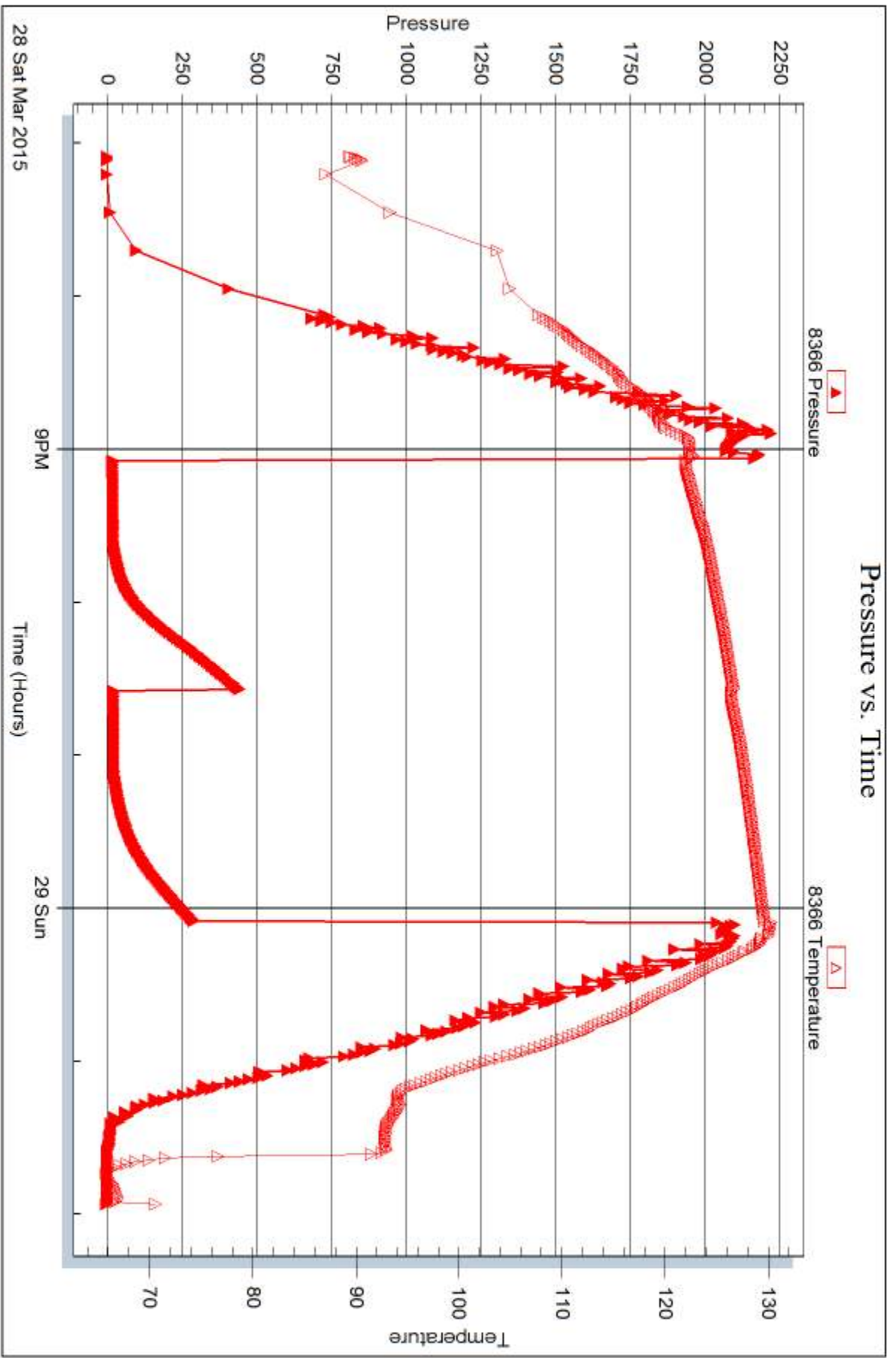


Serial #: 8366

Outside Murfin Drilling Co Inc.

Theron #4-10

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 65027

Printed: 2015.04.01 @ 10:41:47



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

Theron #4-10

10-1s-37w Cheyenne,KS

Start Date: 2015.03.30 @ 08:52:00

End Date: 2015.03.30 @ 17:28:00

Job Ticket #: 65028 DST #: 4

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

Printed: 2015.03.31 @ 16:16:19



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling CO., Inc.

10-1s-37w Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Theron #4-10

Job Ticket: 65028

DST#: 4

ATTN: Robert Hendrix

Test Start: 2015.03.30 @ 08:52:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:51:30

Time Test Ended: 17:28:00

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4541.00 ft (KB) To 4596.00 ft (KB) (TVD)

Reference Elevations: 3227.00 ft (KB)

Total Depth: 4596.00 ft (KB) (TVD)

3216.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8791

Inside

Press@RunDepth: 204.16 psig @ 4542.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.03.30

End Date: 2015.03.30

Last Calib.: 2015.03.30

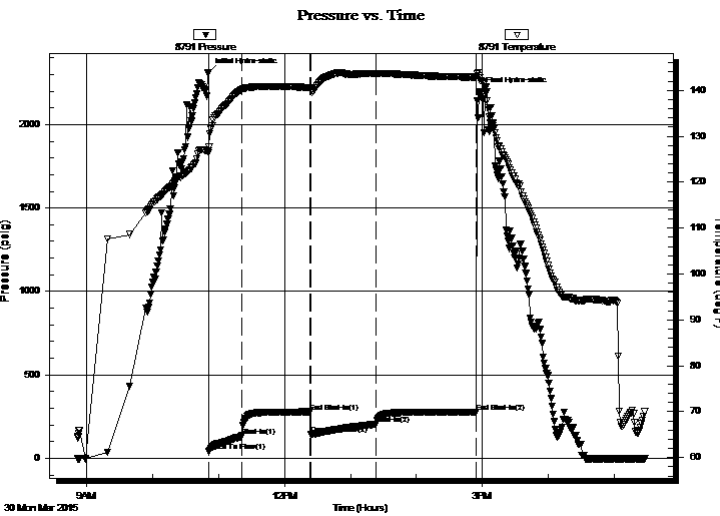
Start Time: 08:52:05

End Time: 17:28:00

Time On Btm: 2015.03.30 @ 10:50:45

Time Off Btm: 2015.03.30 @ 14:56:45

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 5 3/4 min.
60 - IS: Bled off at 3 min., Blow back built to BOB at 45 min.
60 - FF: Blow built to BOB at 14 1/4 min.
90 - FS: Blow back built to 2"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2313.32	126.88	Initial Hydro-static
1	41.24	127.66	Open To Flow (1)
31	130.84	140.17	Shut-In(1)
93	278.11	140.56	End Shut-In(1)
93	144.62	140.41	Open To Flow (2)
153	204.16	143.69	Shut-In(2)
244	276.90	142.89	End Shut-In(2)
246	2198.93	143.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
118.00	GOCM 50% m, 31% g, 19% o	0.58
120.00	SMCGO 77% o, 20% g, 3% m	0.88
284.00	CGO 68% o, 32% g	3.98
0.00	GIP = 850'	0.00

* Recovery from multiple tests

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

Theron #4-10

Job Ticket: 65028

DST#: 4

ATTN: Robert Hendrix

Test Start: 2015.03.30 @ 08:52:00

Tool Information

Drill Pipe:	Length: 4322.00 ft	Diameter: 3.80 inches	Volume: 60.63 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: 206.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 61.64 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	4541.00 ft			Final 86000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	55.00 ft			
Tool Length:	83.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			4518.00	
Hydraulic tool	5.00			4523.00	
Jars	5.00			4528.00	
Safety Joint	3.00			4531.00	
Packer	5.00			4536.00	28.00 Bottom Of Top Packer
Packer	5.00			4541.00	
Stubb	1.00			4542.00	
Recorder	0.00	8791	Inside	4542.00	
Recorder	0.00	8366	Outside	4542.00	
Perforations	18.00			4560.00	
change Over Sub	1.00			4561.00	
drill Pipe	31.00			4592.00	
change Over Sub	1.00			4593.00	
Bullnose	3.00			4596.00	55.00 Bottom Packers & Anchor

Total Tool Length: 83.00



**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

Theron #4-10

Job Ticket: 65028

DST#: 4

ATTN: Robert Hendrix

Test Start: 2015.03.30 @ 08:52:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 73.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
118.00	GOCM 50% <i>m</i> , 31% <i>g</i> , 19% <i>o</i>	0.580
120.00	SMCGO 77% <i>o</i> , 20% <i>g</i> , 3% <i>m</i>	0.882
284.00	CGO 68% <i>o</i> , 32% <i>g</i>	3.984
0.00	GIP = 850'	0.000

Total Length: 522.00 ft Total Volume: 5.446 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

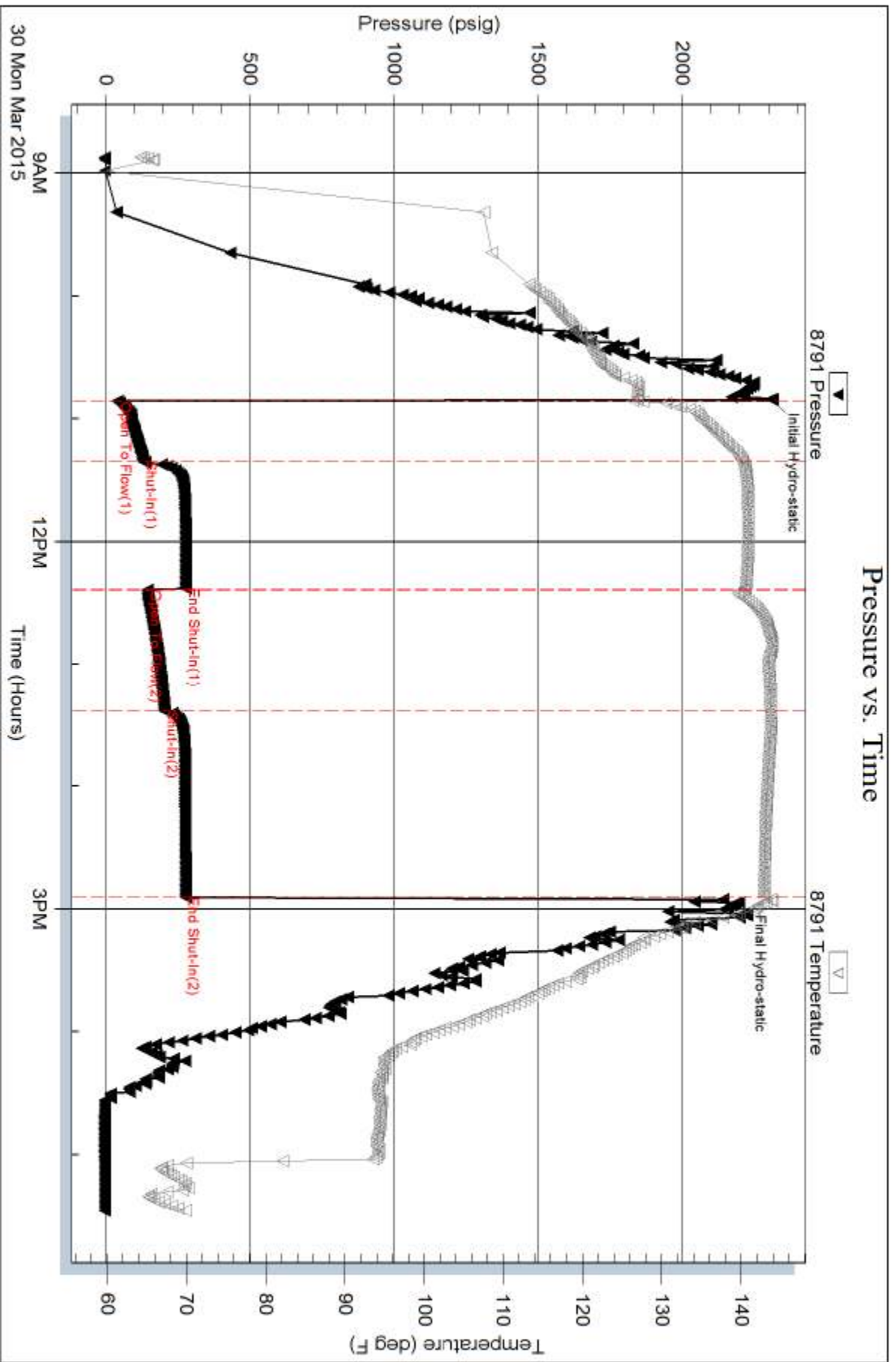
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 37 api @ 80 deg F

Pressure vs. Time

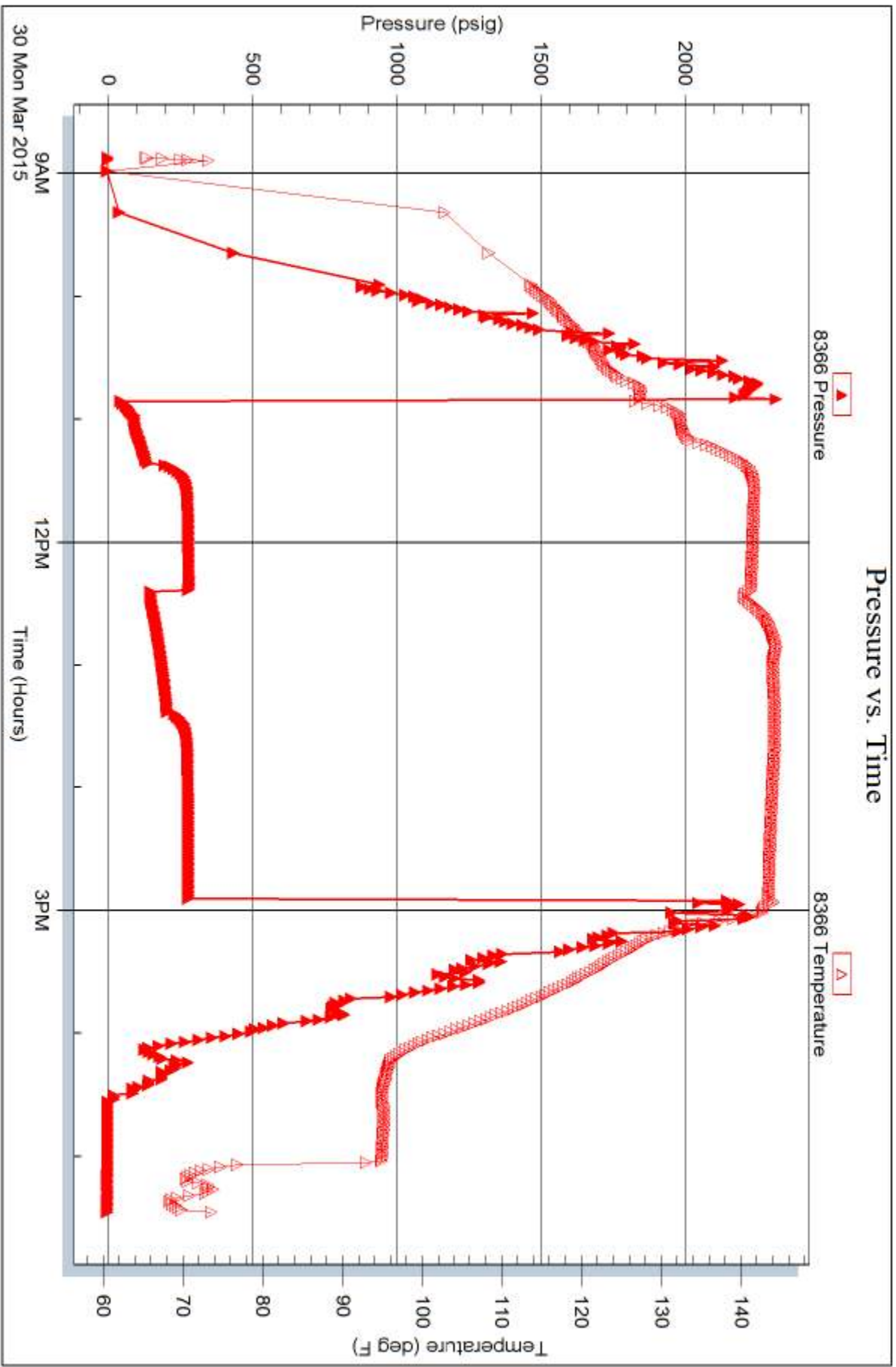


Serial #: 8366

Outside Murfin Drilling CO., Inc.

Theron #4-10

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 65028

Printed: 2015.03.31 @ 16:16:20



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62202

Well Name & No. Theron 4-10 Test No. 1 Date 3-25-15
 Company Murfin Drilling Co., Inc. Elevation 3227 KB 3216 GL
 Address 250 N. Water STE 300 Wichita, KS, 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 10 Twp. 1 Rge. 37 Co. Cheyenne State KS

Interval Tested 3700'-3747' Zone Tested Foraker
 Anchor Length 47' Drill Pipe Run 3471.16 Mud Wt. 8.7
 Top Packer Depth 3695' Drill Collars Run 205.92 Vis 47
 Bottom Packer Depth 3700' Wt. Pipe Run 0 WL 6.0
 Total Depth 3747' Chlorides 600 ppm System LCM #6
 Blow Description IF - weak surface blow built to 3 1/4 in. in 30 min. (in Diesel)
ISI - No return
FF - weak surface blow built to 3 3/4 in. in 60 min.
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
37	Free oil		100		
29	MCO		65		35

Rec Total 66 BHT 123 Gravity 28 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1828 Test 1050 T-On Location 12:14 am
 (B) First Initial Flow 16 Jars 250 T-Started 1:11 am
 (C) First Final Flow 25 Safety Joint 75 T-Open 3:08 am
 (D) Initial Shut-In 1189 Circ Sub N/C T-Pulled 7:09 am
 (E) Second Initial Flow 42 Hourly Standby _____ T-Out 8:57 am
 (F) Second Final Flow 49 Mileage 168 R/T 128 Comments _____
 (G) Final Shut-In 1171 Sampler _____
 (H) Final Hydrostatic 1786 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1503

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

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1503
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65026**

Well Name & No. Theron # 4-10 Test No. 2 Date 3-28-15
 Company Murfin Drilling Co. Inc. Elevation 3227 KB 3216 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 10 Twp. 15 Rge. 37w Co. Cheyenne State KS

Interval Tested 4173 - 4240 Zone Tested Lans. "D"
 Anchor Length 67 Drill Pipe Run 3944 Mud Wt. 9.0
 Top Packer Depth 4168 Drill Collars Run 206 Vis 60
 Bottom Packer Depth 4173 Wt. Pipe Run - WL 7.2
 Total Depth 4240 Chlorides 600 ppm System LCM 12
 Blow Description IF: 1/4" Blow at open, built to 3"
ISI: No blowback
FF: Surface blow started at 14 min, built to just over 1"
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>mco</u>	<u>-</u>	<u>90</u>	<u>-</u>	<u>10</u>
<u>15</u>	<u>OCM</u>	<u>-</u>	<u>12</u>	<u>-</u>	<u>88</u>
<u>60</u>	<u>SOWCM</u>	<u>5</u>	<u>4</u>	<u>7</u>	<u>84</u>

Rec Total 120 BHT 131 Gravity 23.4 API RW @ °F Chlorides ppm
 (A) Initial Hydrostatic 2137 Test 1150 T-On Location 00:30
 (B) First Initial Flow 17 Jars 250 T-Started 1:04
 (C) First Final Flow 43 Safety Joint 75 T-Open 3:11
 (D) Initial Shut-In 524 Circ Sub _____ T-Pulled 7:15
 (E) Second Initial Flow 45 Hourly Standby _____ T-Out 9:00
 (F) Second Final Flow 70 Mileage 168 RT 128 Comments _____
 (G) Final Shut-In 521 Sampler _____
 (H) Final Hydrostatic 2081 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby 1.5d 3.5h
 Accessibility _____
 Sub Total 1603 MP/DST Disc't _____

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

Approved By [Signature] Our Representative James Winder
 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. **65027**

Well Name & No. Theron #3-10 Test No. 3 Date 3-28-15
 Company Murfin Drilling Co. Inc Elevation 3227 KB 3216 GL
 Address 250 N. Water STE 300 Wichita, Ks 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 10 Twp. 1s Rge. 37w Co. Cheyenne State Ks

Interval Tested 4247 - 4303 Zone Tested Lans. "6"
 Anchor Length 56 Drill Pipe Run 4038 Mud Wt. 9.2
 Top Packer Depth 4242 Drill Collars Run 206 Vis 58
 Bottom Packer Depth 4247 Wt. Pipe Run - WL 6.4
 Total Depth 4303 Chlorides 700 ppm System LCM 12

Blow Description IF: weak surface blow, dead at 11min.
ISI: No blow
FF: No blow
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>mud w/oil spots</u>	<u>-</u>	<u>2</u>	<u>-</u>	<u>98</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 129 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2161 Test 1150 T-On Location 18:15 328
 (B) First Initial Flow 14 Jars 250 T-Started 19:05
 (C) First Final Flow 16 Safety Joint 75 T-Open 21:03
 (D) Initial Shut-In 441 Circ Sub _____ T-Pulled 00:05
 (E) Second Initial Flow 16 Hourly Standby _____ T-Out 1:50 329
 (F) Second Final Flow 18 Mileage 168RT 128 Comments _____
 (G) Final Shut-In 287 Sampler _____
 (H) Final Hydrostatic 2106 Straddle _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer 320
 Extra Recorder _____ Sub Total 320
 Day Standby _____ Total 1923
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1603

Approved By [Signature] Our Representative James Winder

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65028**

Well Name & No. Theron #4-10 Test No. 4 Date 3-30-15
 Company Murfin Drilling Co. Inc Elevation 3227 KB 3216 GL
 Address 250 N. Water STE 300 Wichita, KS 67749
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 10 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4541 - 4596 Zone Tested Pawnee
 Anchor Length 55 Drill Pipe Run 4322 Mud Wt. 9.1
 Top Packer Depth 4536 Drill Collars Run 206 Vis 73
 Bottom Packer Depth 4541 Wt. Pipe Run - WL 5.6
 Total Depth 4596 Chlorides 700 ppm System LCM 12

Blow Description IF: Blow built to BOB (11") at 5 3/4 min.
ISI: Bled off at 3 min., Blowback built to BOB at 45 min.
FF: Blow built to BOB at 14 1/4 min.
FSI: Blowback built to 2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>284</u>	<u>CGO C 60</u>	<u>32</u>	<u>68</u>	<u>-</u>	<u>-</u>
<u>120</u>	<u>SMCGO</u>	<u>20</u>	<u>77</u>	<u>-</u>	<u>3</u>
<u>118</u>	<u>60CM</u>	<u>31</u>	<u>19</u>	<u>-</u>	<u>50</u>
<u>Rec</u>	<u>Feet of GIP = 850'</u>	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>
<u>Rec</u>	<u>Feet of</u>	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>
<u>Rec Total 522</u>	<u>BHT 143</u>	<u>Gravity 35</u>	<u>API RW @</u>	<u>F Chlorides</u>	<u>ppm</u>

(A) Initial Hydrostatic 2313 Test 1150 T-On Location 8:15
 (B) First Initial Flow 41 Jars 250 T-Started 8:52
 (C) First Final Flow 131 Safety Joint 75 T-Open 10:51
 (D) Initial Shut-In 278 Circ Sub _____ T-Pulled 14:54
 (E) Second Initial Flow 145 Hourly Standby _____ T-Out 17:15
 (F) Second Final Flow 204 Mileage 168RT 128 Comments _____
 (G) Final Shut-In 277 Sampler _____
 (H) Final Hydrostatic 2199 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1603

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1603
 MP/DST Disc't _____

Approved By R.D. White Our Representative James Winder
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