

DRILL STEM TEST REPORT

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

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637

ATTN: Phil Askey

APC-Carole #2-13

13-16s-45w Cheyenne,CO

Start Date: 2013.07.11 @ 01:47:00

End Date: 2013.07.11 @ 10:03:30

Job Ticket #: 52777 DST #: 1

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

Printed: 2013.07.17 @ 09:29:48



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co., Inc.

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

13-16s-45w Cheyenne, CO

APC-Carole #2-13

Job Ticket: 52777

DST#: 1

Test Start: 2013.07.11 @ 01:47:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:51:20

Time Test Ended: 10:03:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Interval: 4655.00 ft (KB) To 4755.00 ft (KB) (TVD)

Total Depth: 4755.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 4360.00 ft (KB)

4349.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8018 Inside

Press @ Run Depth: 114.68 psig @ 4657.00 ft (KB)

Start Date: 2013.07.11

End Date:

2013.07.11

Start Time: 01:47:02

End Time:

10:03:30

Capacity: 8000.00 psig

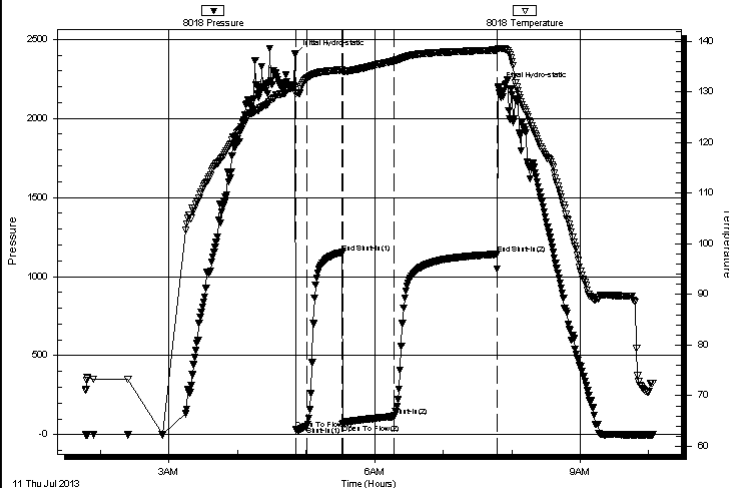
Last Calib.: 2013.07.11

Time On Btm: 2013.07.11 @ 04:50:30

Time Off Btm: 2013.07.11 @ 07:48:30

TEST COMMENT: B.O.B. @ 4 min.
No return.
B.O.B. @ 7 min.
3" Return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2405.49	131.02	Initial Hydro-static
1	32.31	129.72	Open To Flow (1)
11	54.82	132.75	Shut-In(1)
41	1152.86	134.39	End Shut-In(1)
42	67.25	134.05	Open To Flow (2)
87	114.68	136.15	Shut-In(2)
177	1141.26	138.29	End Shut-In(2)
178	2201.80	138.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GOCWM 38g 2o 20w 40m	0.30
185.00	GOCM 30g 10o 60m	1.51
0.00	1070' GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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DRILL STEM TEST REPORT

Mull Drilling Co., Inc.

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

13-16s-45w Cheyenne, CO

APC-Carole #2-13

Job Ticket: 52777

DST#: 1

Test Start: 2013.07.11 @ 01:47:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:51:20

Time Test Ended: 10:03:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Interval: 4655.00 ft (KB) To 4755.00 ft (KB) (TVD)

Total Depth: 4755.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 4360.00 ft (KB)

4349.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 4657.00 ft (KB)

Start Date: 2013.07.11

End Date:

2013.07.11

Start Time: 01:47:05

End Time:

10:03:29

Capacity: 8000.00 psig

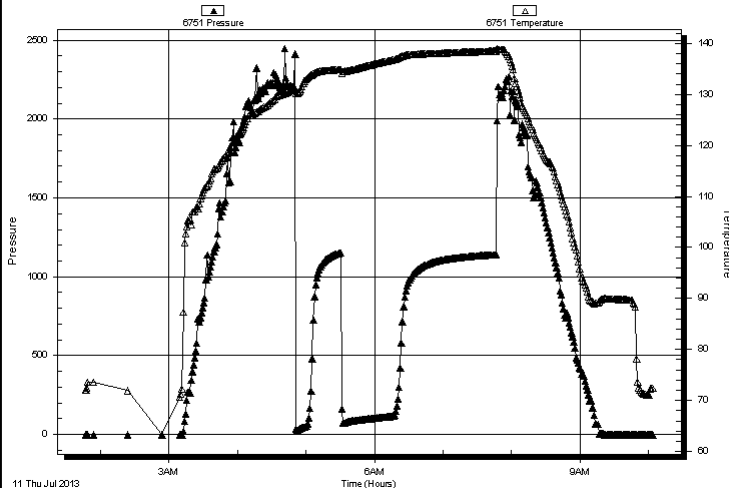
Last Calib.: 2013.07.11

Time On Btm:

Time Off Btm:

TEST COMMENT: B.O.B. @ 4 min.
No return.
B.O.B. @ 7 min.
3" Return.

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
60.00	GOCWM 38g 2o 20w 40m	0.30
185.00	GOCM 30g 10o 60m	1.51
0.00	1070' GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co., Inc.

13-16s-45w Cheyenne, CO

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

APC-Carole #2-13

Job Ticket: 52777

DST#: 1

Test Start: 2013.07.11 @ 01:47:00

Tool Information

Drill Pipe:	Length:	4484.00 ft	Diameter:	3.80 inches	Volume:	62.90 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	inches	Volume:	0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length:	179.00 ft	Diameter:	2.25 inches	Volume:	0.88 bbl	Weight to Pull Loose:	85000.00 lb
					Total Volume:	63.78 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		28.00 ft					String Weight: Initial	70000.00 lb
Depth to Top Packer:		4655.00 ft					Final	73000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		100.00 ft						
Tool Length:		120.00 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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Change Over Sub	1.00			4636.00	
Shut In Tool	5.00			4641.00	
Hydraulic tool	5.00			4646.00	
Packer	5.00			4651.00	20.00 Bottom Of Top Packer
Packer	4.00			4655.00	
Stubb	1.00			4656.00	
Perforations	1.00			4657.00	
Recorder	0.00	8018	Inside	4657.00	
Recorder	0.00	6751	Outside	4657.00	
Perforations	30.00			4687.00	
Change Over Sub	1.00			4688.00	
Drill Pipe	63.00			4751.00	
Bullnose	1.00			4752.00	
Bullnose	3.00			4755.00	100.00 Bottom Packers & Anchor

Total Tool Length: 120.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co., Inc.

13-16s-45w Cheyenne, CO

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

APC-Carole #2-13

Job Ticket: 52777

DST#: 1

Test Start: 2013.07.11 @ 01:47:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 60.00 sec/qt

Water Loss: 7.97 in³

Resistivity: ohm.m

Salinity: 3400.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

23000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GOCWM 38g 2o 20w 40m	0.295
185.00	GOCM 30g 10o 60m	1.511
0.00	1070' GIP	0.000

Total Length: 245.00 ft

Total Volume: 1.806 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .310 @ 67 Degrees F = 23000 PPM

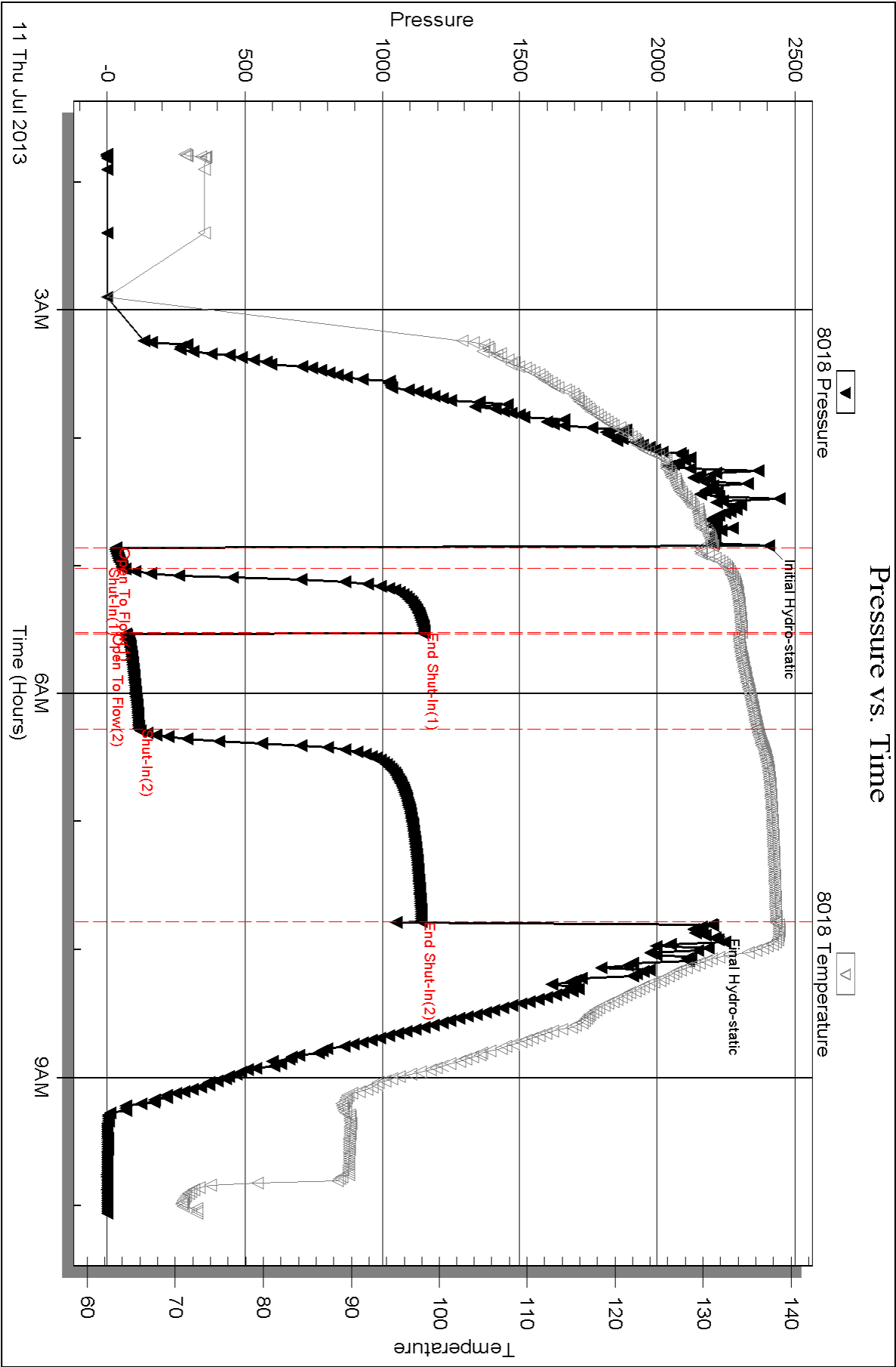
Serial #: 8018

Inside

Mull Drilling Co., Inc.

APC-Carole #2-13

DST Test Number: 1



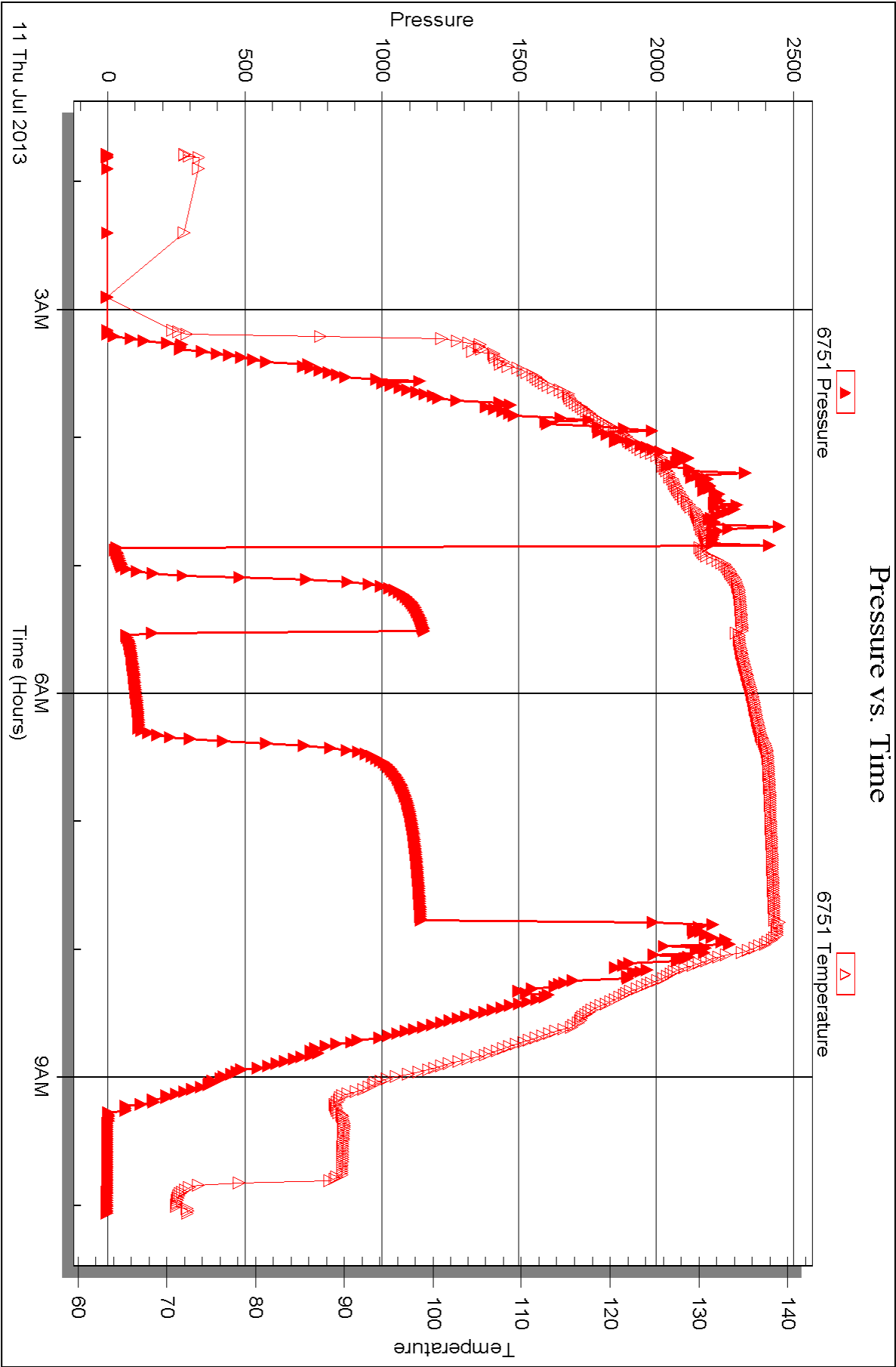
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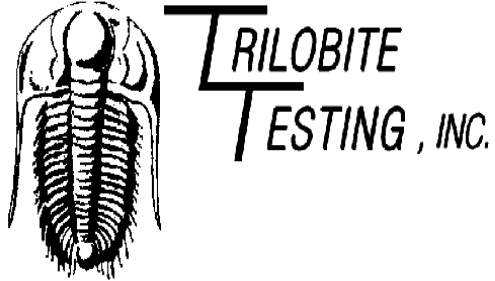
Outside

Mull Drilling Co., Inc.

APC-Carole #2-13

DST Test Number: 1





DRILL STEM TEST REPORT

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

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637

ATTN: Phil Askey

APC-Carole #2-13

13-16s-45w Cheyenne,CO

Start Date: 2013.07.14 @ 22:29:26

End Date: 2013.07.15 @ 06:15:26

Job Ticket #: DST #: 2

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

Printed: 2013.07.17 @ 09:29:01



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co., Inc.

1700 N. Waterfront Pkw y.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

13-16s-45w Cheyenne, CO

APC-Carole #2-13

Job Ticket: **DST#: 2**

Test Start: 2013.07.14 @ 22:29:26

GENERAL INFORMATION:

Formation: **Miss Sergen**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:26:56

Time Test Ended: 06:15:26

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: **5395.00 ft (KB) To 5465.00 ft (KB) (TVD)**

Total Depth: 5465.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 4360.00 ft (KB)

4349.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8356 Outside

Press @ Run Depth: 48.31 psig @ 5396.00 ft (KB)

Start Date: 2013.07.14

End Date:

2013.07.15

Start Time: 22:29:31

End Time:

06:15:25

Capacity: 8000.00 psig

Last Calib.: 2013.07.15

Time On Btm: 2013.07.15 @ 00:25:26

Time Off Btm: 2013.07.15 @ 04:01:56

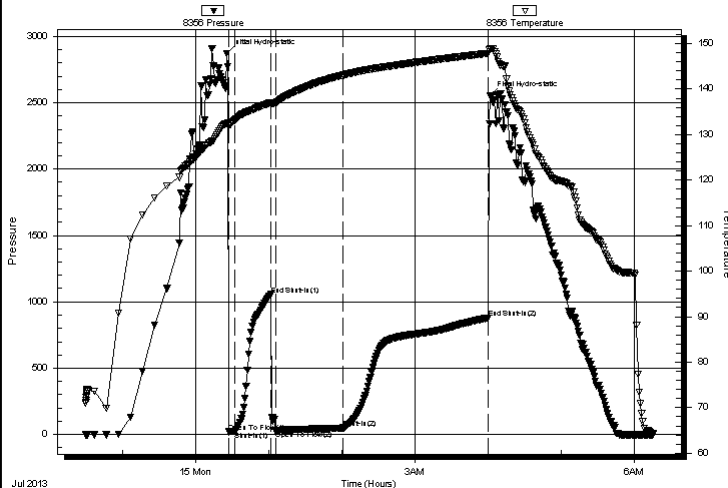
TEST COMMENT: IF: 1/4" blow built to 1" in 5 min.

IS: No return.

FF: BOB in 47 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2871.18	132.39	Initial Hydro-static
2	20.22	131.85	Open To Flow (1)
7	24.34	133.19	Shut-In (1)
36	1054.44	136.98	End Shut-In (1)
40	28.63	136.99	Open To Flow (2)
96	48.31	143.07	Shut-In (2)
215	878.82	147.87	End Shut-In (2)
217	2552.68	148.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
80.00	ocm 5%o 95% m	0.39
0.00	100 GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



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DRILL STEM TEST REPORT

Mull Drilling Co., Inc.

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

13-16s-45w Cheyenne, CO

APC-Carole #2-13

Job Ticket: **DST#: 2**

Test Start: 2013.07.14 @ 22:29:26

GENERAL INFORMATION:

Formation: **Miss Sergen**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:26:56

Time Test Ended: 06:15:26

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: **5395.00 ft (KB) To 5465.00 ft (KB) (TVD)**

Total Depth: 5465.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 4360.00 ft (KB)

4349.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8373 Inside

Press @ Run Depth: psig @ 5396.00 ft (KB)

Start Date: 2013.07.14

End Date:

2013.07.15

Start Time: 22:29:20

End Time:

06:15:14

Capacity: 8000.00 psig

Last Calib.: 2013.07.15

Time On Btm:

Time Off Btm:

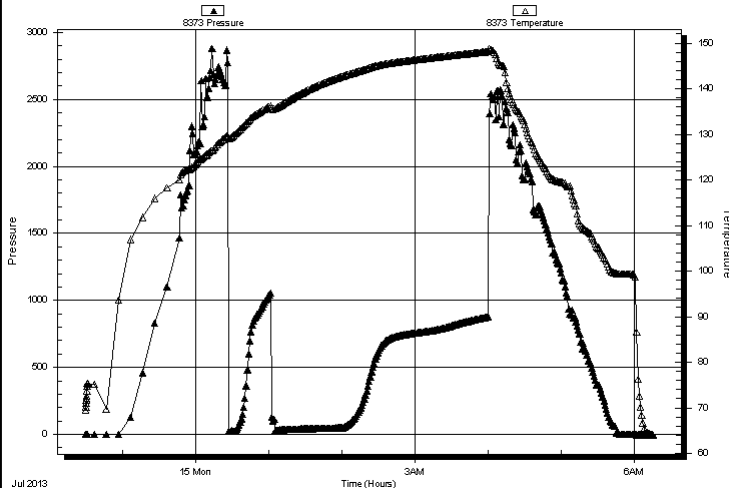
TEST COMMENT: IF: 1/4" blow built to 1" in 5 min.

IS: No return.

FF: BOB in 47 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
80.00	ocm 5%o 95%m	0.39
0.00	100 GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co., Inc.

13-16s-45w Cheyenne, CO

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

APC-Carole #2-13

Job Ticket:

DST#: 2

Test Start: 2013.07.14 @ 22:29:26

Tool Information

Drill Pipe:	Length: 5210.00 ft	Diameter: 3.80 inches	Volume: 73.08 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose:	85000.00 lb
		Total Volume:	73.96 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial	78000.00 lb
Depth to Top Packer:	5395.00 ft			Final	78000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	70.00 ft				
Tool Length:	90.00 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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Stubb	1.00			5376.00	
Shut In Tool	5.00			5381.00	
Hydraulic tool	5.00			5386.00	
Packer	5.00			5391.00	20.00 Bottom Of Top Packer
Packer	4.00			5395.00	
Stubb	1.00			5396.00	
Recorder	0.00	8373	Inside	5396.00	
Recorder	0.00	8356	Outside	5396.00	
Perforations	3.00			5399.00	
Change Over Sub	1.00			5400.00	
Drill Pipe	62.00			5462.00	
Change Over Sub	1.00			5463.00	
Bullnose	2.00			5465.00	70.00 Bottom Packers & Anchor

Total Tool Length: 90.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co., Inc.

13-16s-45w Cheyenne, CO

1700 N. Waterfront Pkw y.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

APC-Carole #2-13

Job Ticket:

DST#: 2

Test Start: 2013.07.14 @ 22:29:26

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 56.00 sec/qt

Water Loss: 9.98 in³

Resistivity: 0.00 ohm.m

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

0 deg API

0 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
80.00	ocm 5%o 95%m	0.393
0.00	100 GIP	0.000

Total Length: 80.00 ft

Total Volume: 0.393 bbl

Num Fluid Samples: 0

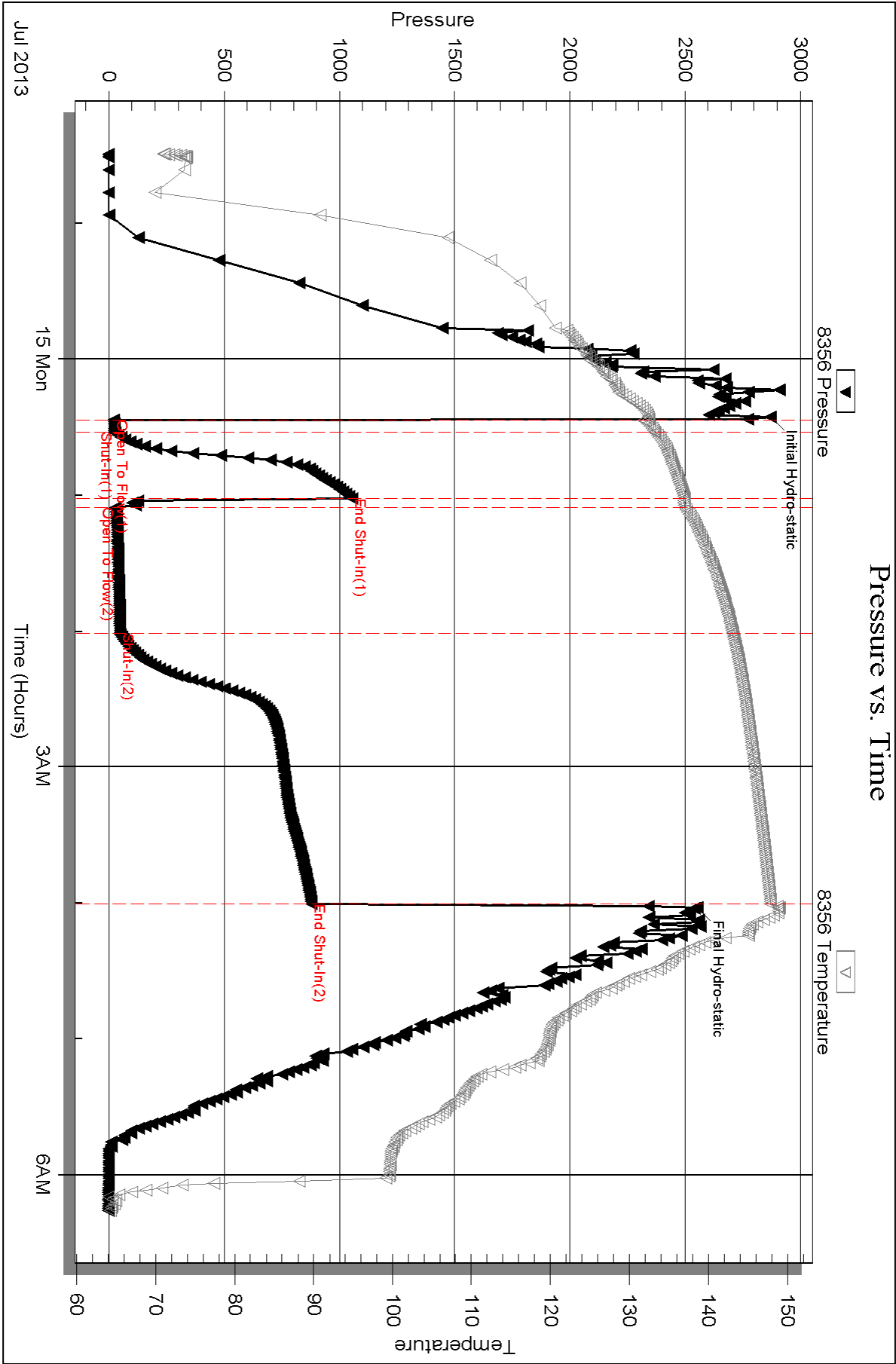
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



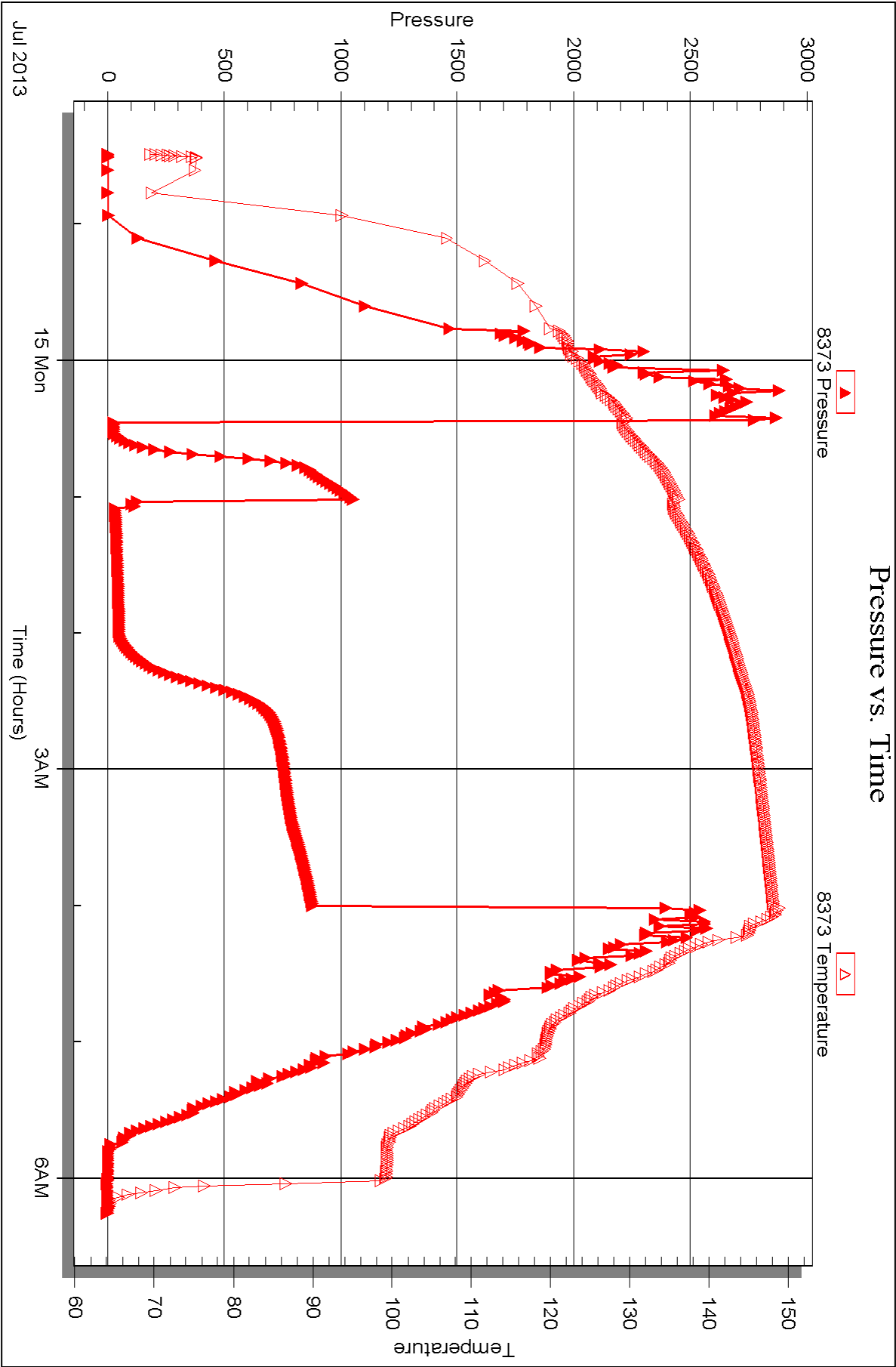
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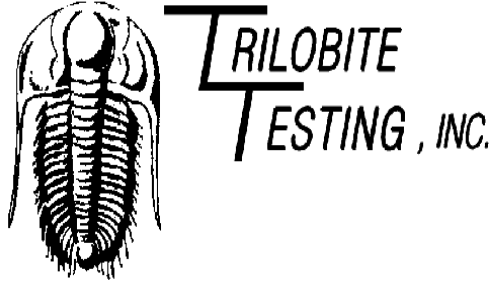
Inside

Mull Drilling Co., Inc.

APC-Carole #2-13

DST Test Number: 2





DRILL STEM TEST REPORT

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

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637

ATTN: Phil Askey

APC-Carole #2-13

13-16s-45w Cheyenne,CO

Start Date: 2013.07.16 @ 09:25:00

End Date: 2013.07.16 @ 16:59:45

Job Ticket #: 53094 DST #: 3

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

Printed: 2013.07.17 @ 09:28:17



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co., Inc.

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

13-16s-45w Cheyenne, CO

APC-Carole #2-13

Job Ticket: 53094

DST#: 3

Test Start: 2013.07.16 @ 09:25:00

GENERAL INFORMATION:

Formation: **St. Louis**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:18:45

Time Test Ended: 16:59:45

Test Type: Conventional Straddle (Reset)

Tester: Jace McKinney

Unit No: 46

Interval: 5337.00 ft (KB) To 5365.00 ft (KB) (TVD)

Total Depth: 5587.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 4360.00 ft (KB)

4349.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8675 Inside

Press @ Run Depth: 33.70 psig @ 5338.00 ft (KB)

Start Date: 2013.07.16

End Date:

2013.07.16

Start Time: 09:25:15

End Time:

16:59:45

Capacity: 8000.00 psig

Last Calib.: 2013.07.16

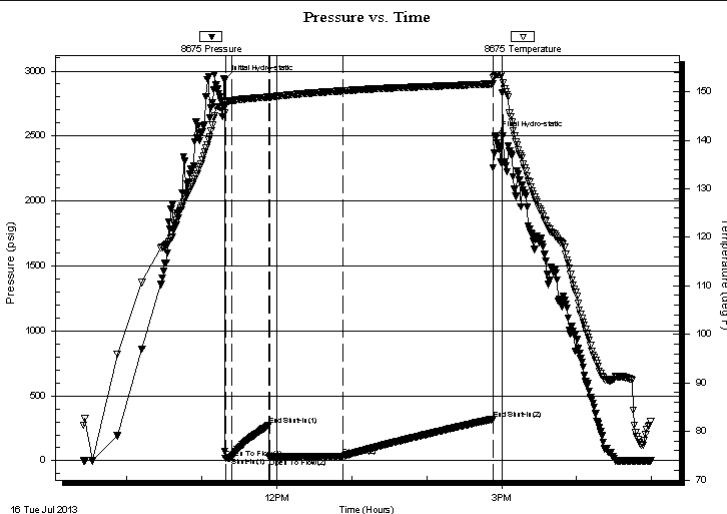
Time On Btm: 2013.07.16 @ 11:18:00

Time Off Btm: 2013.07.16 @ 14:55:00

TEST COMMENT: Built to 9" blow
Bled off for 5 min. No return blow
Built to 10 1/2" blow
Bled off for 5 min. No return blow

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2931.03	146.99	Initial Hydro-static
1	20.18	147.20	Open To Flow (1)
6	24.99	148.17	Shut-In(1)
36	273.99	148.88	End Shut-In(1)
36	23.29	148.80	Open To Flow (2)
95	33.70	150.18	Shut-In(2)
215	321.39	151.62	End Shut-In(2)
217	2499.26	153.43	Final Hydro-static



Recovery

Length (ft)	Description	Volume (bbl)
20.00	100% Mud	0.10

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co., Inc.

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

13-16s-45w Cheyenne, CO

APC-Carole #2-13

Job Ticket: 53094

DST#: 3

Test Start: 2013.07.16 @ 09:25:00

GENERAL INFORMATION:

Formation: **St. Louis**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:18:45

Time Test Ended: 16:59:45

Test Type: Conventional Straddle (Reset)

Tester: Jace McKinney

Unit No: 46

Interval: 5337.00 ft (KB) To 5365.00 ft (KB) (TVD)

Total Depth: 5587.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 4360.00 ft (KB)

4349.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 6672 Below (Straddle)

Press @ Run Depth: psig @ 5372.00 ft (KB)

Start Date: 2013.07.16

End Date:

2013.07.16

Start Time: 09:25:01

End Time:

17:01:00

Capacity: 8000.00 psig

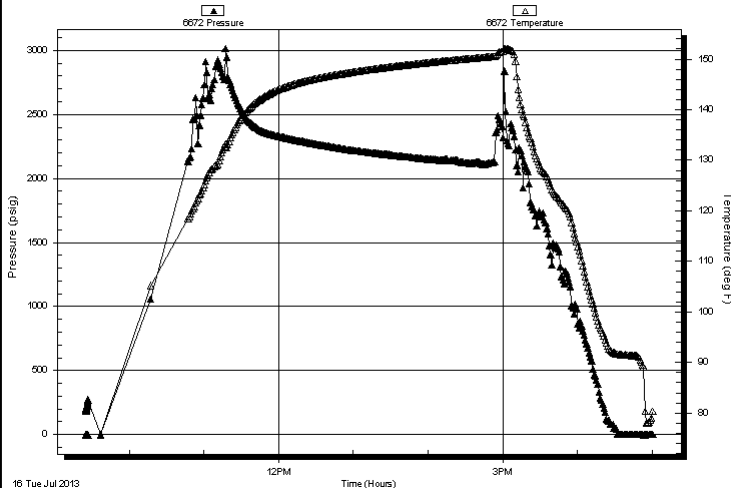
Last Calib.: 2013.07.16

Time On Btm:

Time Off Btm:

TEST COMMENT: Built to 9" blow
Bled off for 5 min. No return blow
Built to 10 1/2" blow
Bled off for 5 min. No return blow

Pressure vs. Time



PRESSURE SUMMARY

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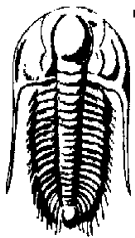
Recovery

Length (ft)	Description	Volume (bbl)
20.00	100% Mud	0.10

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co., Inc.

13-16s-45w Cheyenne, CO

1700 N. Waterfront Pkwy.
B# 1200
Wichita, KS 67206-6637
ATTN: Phil Askey

APC-Carole #2-13

Job Ticket: 53094

DST#: 3

Test Start: 2013.07.16 @ 09:25:00

Tool Information

Drill Pipe:	Length: 5143.84 ft	Diameter: 3.80 inches	Volume: 72.15 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 178.94 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose:	86000.00 lb
		Total Volume:	- bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.78 ft			String Weight: Initial	74000.00 lb
Depth to Top Packer:	5337.00 ft			Final	76000.00 lb
Depth to Bottom Packer:	5365.00 ft				
Interval between Packers:	28.00 ft				
Tool Length:	275.00 ft				
Number of Packers:	3	Diameter:	6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			5322.00	
Hydraulic tool	5.00			5327.00	
Packer	5.00			5332.00	20.00 Bottom Of Top Packer
Packer	5.00			5337.00	
Stubb	1.00			5338.00	
Recorder	0.00	8675	Inside	5338.00	
Recorder	0.00	8650	Outside	5338.00	
Perforations	0.00			5338.00	
Change Over Sub	0.00			5338.00	
drill Pipe	0.00			5338.00	
change Over Sub	0.00			5338.00	
Perforations	26.00			5364.00	
Blank Off Sub	1.00			5365.00	28.00 Tool Interval
Packer	5.00			5370.00	
Stubb	1.00			5371.00	
Change Over Sub	1.00			5372.00	
Recorder	0.00	6672	Below	5372.00	
Drill Pipe	220.00			5592.00	
Change Over Sub	0.00			5592.00	
Bullnose	0.00			5592.00	227.00 Bottom Packers & Anchor

Total Tool Length: 275.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co., Inc.

13-16s-45w Cheyenne, CO

1700 N. Waterfront Pkw y.

APC-Carole #2-13

B# 1200

Job Ticket: 53094

DST#: 3

Wichita, KS 67206-6637

Test Start: 2013.07.16 @ 09:25:00

ATTN: Phil Askey

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: 9.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	100% Mud	0.098

Total Length: 20.00 ft

Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

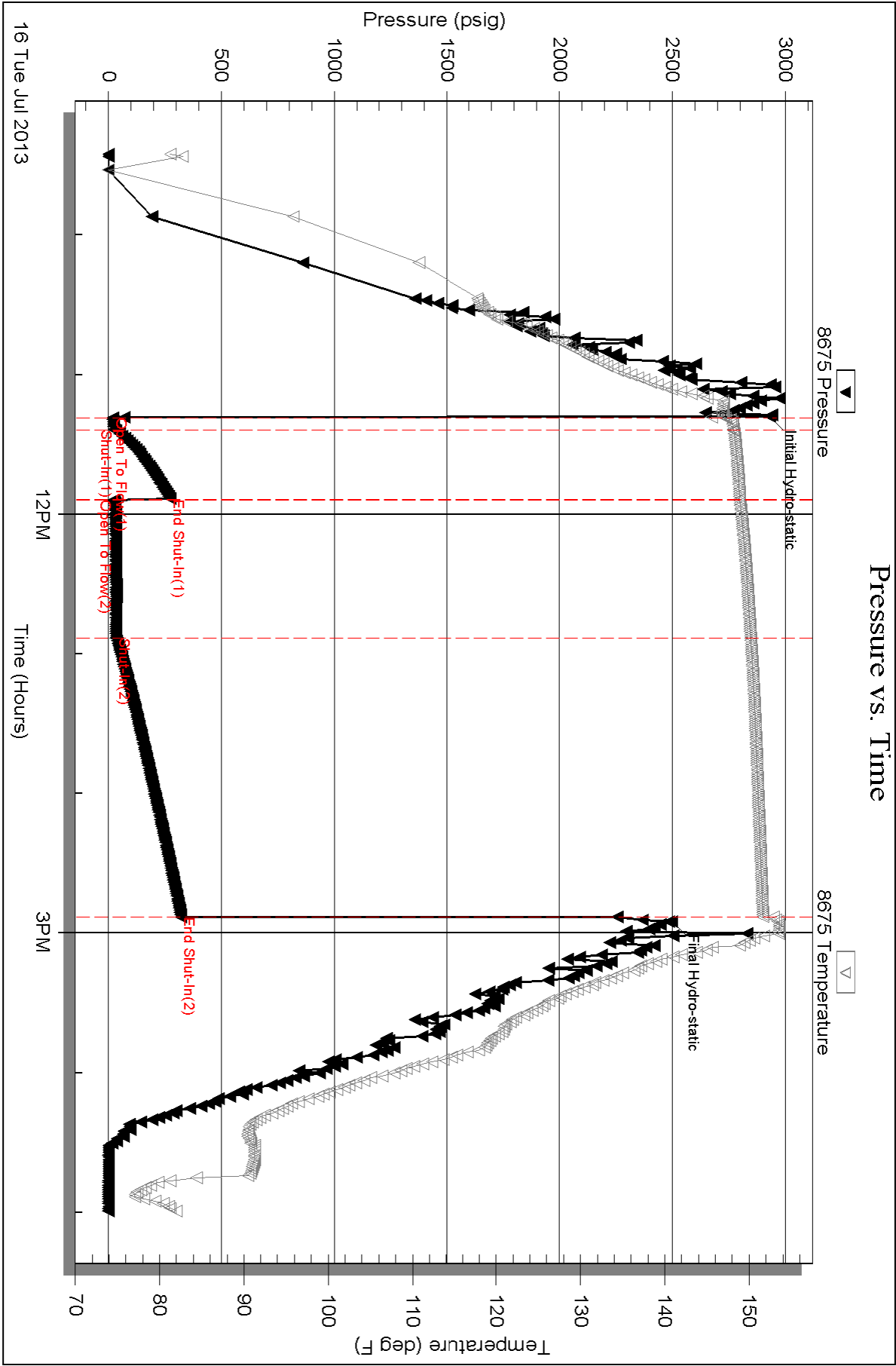
Serial #: 8675

Inside

Mull Drilling Co., Inc.

APC-Carole #2-13

DST Test Number: 3

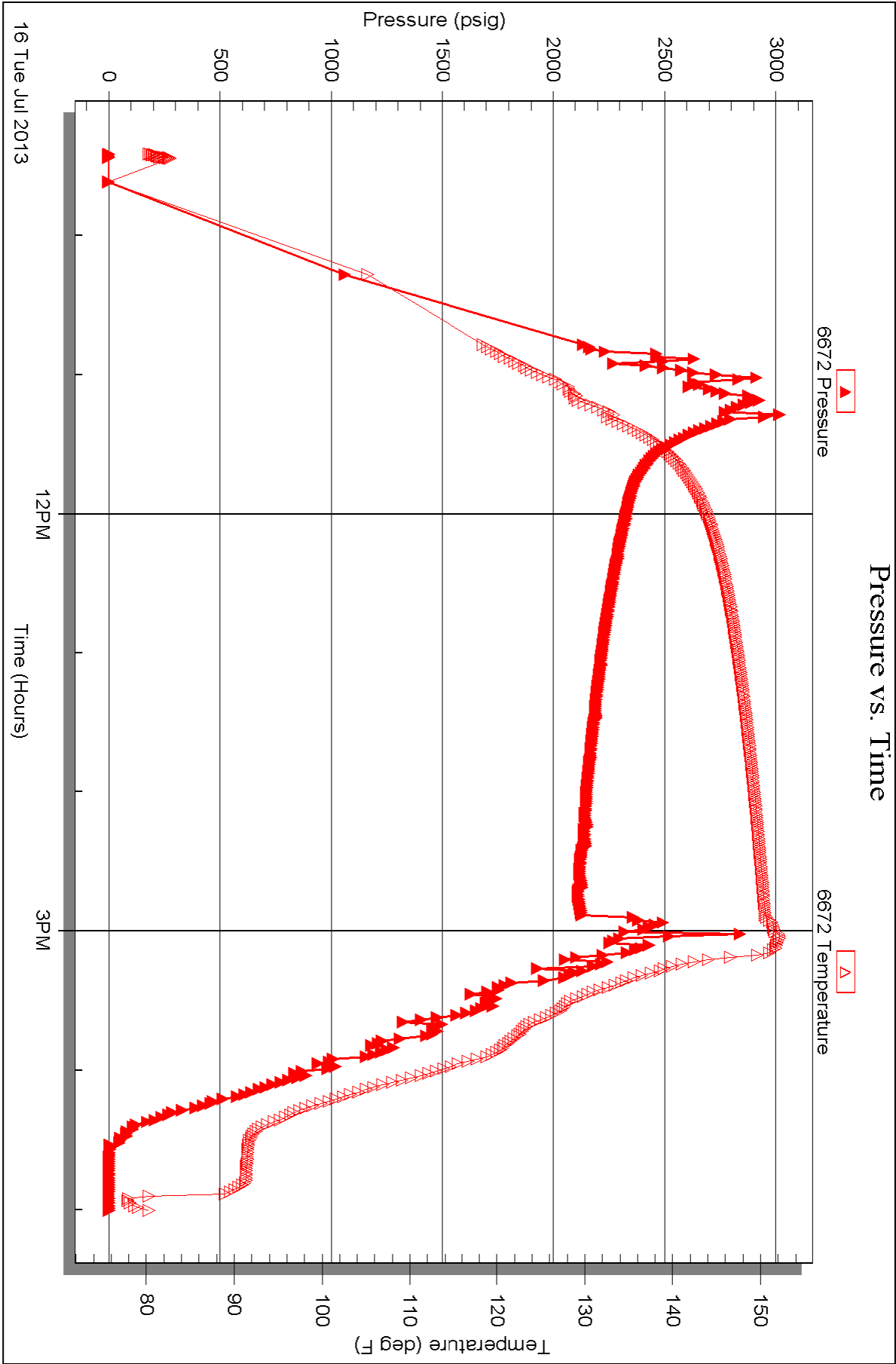


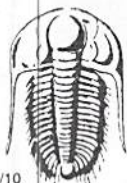
Serial #: 6672

Below (Straddling Co., Inc.

APC-Carole #2-13

DST Test Number: 3





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52777

4/10

Well Name & No.	APC-Carole #2-13		Test No.	1	Date	7-11-13
Company	Mull Drilling Co., Inc.		Elevation	4360	KB	4349 GL
Address	1700 N. Waterfront Pkwy B#1200 Wichita, KS 67206					
Co. Rep / Geo.	Phil Askey		Rig	MDC #20		
Location: Sec.	13	Twp.	16	Rge.	45	Co. Cheyenne State CO

Interval Tested	4655 - 4755	Zone Tested	Marmaton
Anchor Length	100	Drill Pipe Run	4484
Top Packer Depth	4651	Drill Collars Run	179
Bottom Packer Depth	4655	Wt. Pipe Run	-
Total Depth	4755	Chlorides	3400 ppm System
		LCM	4#

Blow Description B.O.B. @ 4 min.
No return.
B.O.B. @ 7 min.
3" Return.

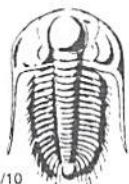
Rec	Feet of	%gas	%oil	%water	%mud
Rec 185	Feet of GOCWM	30	%gas 10	%oil	%water 60 %mud
Rec 60	Feet of GOCWM	38 58	%gas 2	%oil 20	%water 40 %mud
Rec	Feet of 1070' GIP	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total	245	BHT	138	Gravity	-	API RW	.310 @ 67 °F	Chlorides	23000 ppm
(A) Initial Hydrostatic	2406	<input checked="" type="checkbox"/> Test	1,450	T-On Location	00:15				
(B) First Initial Flow	32	<input type="checkbox"/> Jars		T-Started	1:47				
(C) First Final Flow	55	<input type="checkbox"/> Safety Joint		T-Open	4:51				
(D) Initial Shut-In	1153	<input type="checkbox"/> Circ Sub		T-Pulled	7:47				
(E) Second Initial Flow	67	<input type="checkbox"/> Hourly Standby		T-Out	10:04				
(F) Second Final Flow	115	<input type="checkbox"/> Mileage	280 RT 310	Comments					
(G) Final Shut-In	1141	<input type="checkbox"/> Sampler							
(H) Final Hydrostatic	2202	<input type="checkbox"/> Straddle							

Initial Open	9	<input type="checkbox"/> Shale Packer		<input type="checkbox"/> Ruined Shale Packer	
Initial Shut-In	30	<input type="checkbox"/> Extra Packer		<input checked="" type="checkbox"/> Ruined Packer	320
Final Flow	45	<input type="checkbox"/> Extra Recorder		<input type="checkbox"/> Extra Copies	
Final Shut-In	90	<input type="checkbox"/> Day Standby		Sub Total	0
		<input type="checkbox"/> Accessibility		Total	2080
		Sub Total	1760	MP/DST Disc't	

Approved By _____ Our Representative Chuck Amos

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. 53178

Well Name & No. APC-Carole 2-13 Test No. 2 Date 7-14-13
 Company Mull Drilling Co Inc Elevation 4360 KB 4349 GL
 Address _____
 Co. Rep / Geo. Phil Askey Rig Martin 20
 Location: Sec. 13 Twp. 16 Rge. 45 Co. Cheyenne State CO

Interval Tested 5395 5465 Zone Tested Miss Spergen
 Anchor Length 70 Drill Pipe Run 5210 Mud Wt. 9.2
 Top Packer Depth 5390 Drill Collars Run 179 Vis 56
 Bottom Packer Depth 5395 Wt. Pipe Run _____ WL 10.0
 Total Depth 5465 Chlorides 5000 ppm System LCM 9

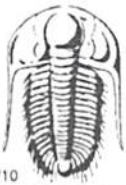
Blow Description IF: 1/4 blow built to 1 in 5 min.
#3: No Return.
FF: BOB in 47 min, ~~not~~ was plugging.
F5: No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>80</u>	<u>0cm</u>	<u>5</u>		<u>95</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	<u>100 GIP</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec Total <u>80</u>	BHT <u>147</u>	Gravity _____	API RW _____	@ _____ °F	Chlorides _____ ppm

(A) Initial Hydrostatic <u>2871</u>	<input checked="" type="checkbox"/> Test 1550	T-On Location <u>21:00</u>
(B) First Initial Flow <u>20</u>	<input type="checkbox"/> Jars _____	T-Started <u>22:29</u>
(C) First Final Flow <u>24</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>00:26</u>
(D) Initial Shut-In <u>1054</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>4:01</u>
(E) Second Initial Flow <u>28</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>6:15</u>
(F) Second Final Flow <u>48</u>	<input checked="" type="checkbox"/> Mileage <u>200</u> 620	Comments <u>Motel</u>
(G) Final Shut-In <u>878</u>	<input type="checkbox"/> Sampler _____	<u>Co price list.</u>
(H) Final Hydrostatic <u>2552</u>	<input type="checkbox"/> Straddle _____	<u>loaded tools 7/15 20:00</u>

Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer _____	<input checked="" type="checkbox"/> Ruined Packer 320
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>120</u>	<input type="checkbox"/> Day Standby _____	Total <u>2490</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>2170</u>	

Approved By Phil Askey Our Representative _____
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53094

Well Name & No. APC-Larole #2-13 Test No. 3 Date 7/16/13
 Company Mull Drilling Company, Inc Elevation 4360 KB 4349 GL
 Address 1700 N Waterfront PKWY B #1200 Wichita KS 67206-6637
 Co. Rep / Geo. Phil Ashaey Rig Martin Rig 20
 Location: Sec. 13 Twp. 16S Rge. 45W Co. Cheyenne Co State CO.

Interval Tested 5337-5365 ^{Log TD} 5587 Zone Tested St. Louis
 Anchor Length 28' ^{222' pipe} Drill Pipe Run 5143.84 Mud Wt. 9.3
 Top Packer Depth 5333 Drill Collars Run 178.94 Vis 60
 Bottom Packer Depth 5337 Wt. Pipe Run WL 9.6
 Total Depth 5587 Chlorides 5,400 ppm System LCM 8#

Blow Description Built to 9" below
Bled off for 5 min. No return below
Built to 10 1/2" below
Bled off for 5 min. No return below

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>20</u>					
Rec					
Rec					
Rec					
Rec					

Rec Total 20 BHT 151 Gravity API RW @ ° F Chlorides ppm
 (A) Initial Hydrostatic 2,931 ☒ Test 1550 T-On Location 8:45
 (B) First Initial Flow 20 ☐ Jars T-Started 9:25
 (C) First Final Flow 25 ☐ Safety Joint T-Open 11:18
 (D) Initial Shut-In 274 ☒ Circ Sub N/C T-Pulled 14:53
 (E) Second Initial Flow 23 ☐ Hourly Standby T-Out 16:59
 (F) Second Final Flow 34 ☒ Mileage 210 AT 310 Comments
 (G) Final Shut-In 321 ☐ Sampler
 (H) Final Hydrostatic 2,449 ☒ Straddle 600 ☐ Ruined Shale Packer
☐ Shale Packer ☐ Ruined Packer
☐ Extra Packer ☐ Extra Copies
☐ Extra Recorder Sub Total 0
☐ Day Standby Total 2460
☐ Accessibility MP/DST Disc't

Initial Open 5
 Initial Shut-In 30
 Final Flow 60
 Final Shut-In 120
 Sub Total 2460

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