

DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

KLT #1-9

9-16s-37w Wichita,KS

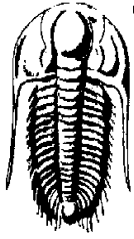
Start Date: 2017.04.08 @ 15:25:51

End Date: 2017.04.08 @ 21:56:51

Job Ticket #: 63785 DST #: 1

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

Printed: 2017.04.17 @ 09:53:14



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co Inc
 1700 N Waterfront Pkwy
 Wichita, KS 67206
 ATTN: Kevin Kessler

9-16s-37w Wichita, KS
KLT #1-9
 Job Ticket: 63785 **DST#: 1**
 Test Start: 2017.04.08 @ 15:25:51

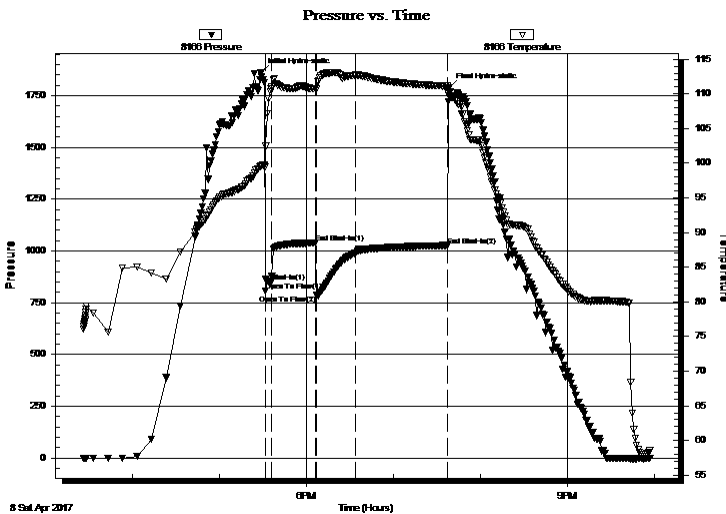
GENERAL INFORMATION:

Formation: **Topeka**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:31:21 Tester: Brandon Turley
 Time Test Ended: 21:56:51 Unit No: 79
 Interval: **3810.00 ft (KB) To 3880.00 ft (KB) (TVD)** Reference Elevations: 3380.00 ft (KB)
 Total Depth: 3880.00 ft (KB) (TVD) 3367.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 13.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 989.66 psig @ 3811.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.08 End Date: 2017.04.08 Last Calib.: 2017.04.08
 Start Time: 15:25:56 End Time: 21:56:50 Time On Btm: 2017.04.08 @ 17:28:21
 Time Off Btm: 2017.04.08 @ 19:38:21

TEST COMMENT: IF: BOB in 30 sec.
 IS: No return.
 FF: BOB in 30 sec.
 FS: No return.

PRESSURE SUMMARY



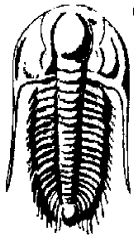
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1861.78	99.65	Initial Hydro-static
3	804.97	99.47	Open To Flow (1)
7	851.59	110.68	Shut-In(1)
38	1038.59	110.73	End Shut-In(1)
39	784.36	110.71	Open To Flow (2)
66	989.66	112.71	Shut-In(2)
129	1026.06	111.12	End Shut-In(2)
130	1788.21	109.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1488.00	mcw 95%w 5%m	19.21
248.00	mcw 80%w 20%m	3.48
341.00	mw 50%w 50%m	4.78

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co Inc
 1700 N Waterfront Pkwy
 Wichita, KS 67206
 ATTN: Kevin Kessler

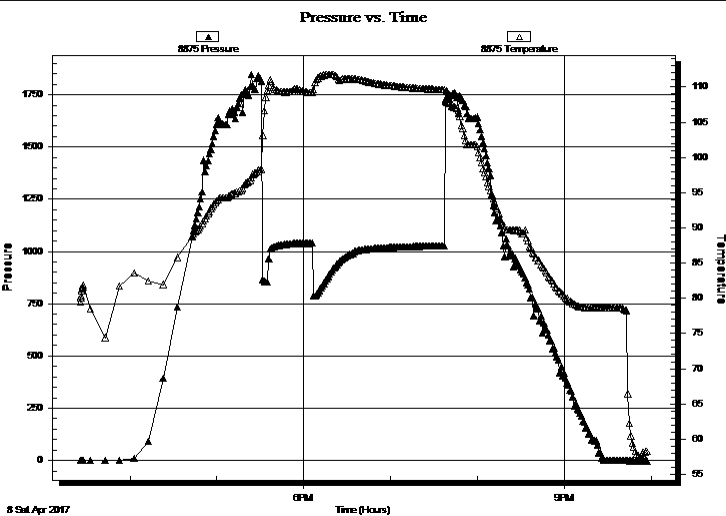
9-16s-37w Wichita,KS
KLT #1-9
 Job Ticket: 63785 **DST#: 1**
 Test Start: 2017.04.08 @ 15:25:51

GENERAL INFORMATION:

Formation: **Topeka**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:31:21 Tester: Brandon Turley
 Time Test Ended: 21:56:51 Unit No: 79
 Interval: **3810.00 ft (KB) To 3880.00 ft (KB) (TVD)** Reference Elevations: 3380.00 ft (KB)
 Total Depth: 3880.00 ft (KB) (TVD) 3367.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 13.00 ft

Serial #: 8875 Inside
 Press@RunDepth: psig @ 3811.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.08 End Date: 2017.04.08 Last Calib.: 2017.04.08
 Start Time: 15:25:53 End Time: 21:56:47 Time On Btm:
 Time Off Btm:

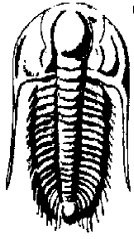
TEST COMMENT: IF: BOB in 30 sec.
 IS: No return.
 FF: BOB in 30 sec.
 FS: No return.



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

Recovery		
Length (ft)	Description	Volume (bbl)
1488.00	mcw 95%w 5%m	19.21
248.00	mcw 80%w 20%m	3.48
341.00	mw 50%w 50%m	4.78

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

9-16s-37w Wichita,KS
KLT #1-9
Job Ticket: 63785 **DST#: 1**
Test Start: 2017.04.08 @ 15:25:51

Tool Information

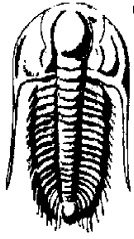
Drill Pipe:	Length: 3614.00 ft	Diameter: 3.80 inches	Volume: 50.69 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 51.59 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	3810.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	70.00 ft			
Tool Length:	97.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			3784.00	
Shut In Tool	5.00			3789.00	
Hydraulic tool	5.00			3794.00	
Jars	5.00			3799.00	
Safety Joint	2.00			3801.00	
Packer	5.00			3806.00	27.00 Bottom Of Top Packer
Packer	4.00			3810.00	
Stubb	1.00			3811.00	
Recorder	0.00	8875	Inside	3811.00	
Recorder	0.00	8166	Outside	3811.00	
Perforations	30.00			3841.00	
Change Over Sub	1.00			3842.00	
Drill Pipe	32.00			3874.00	
Change Over Sub	1.00			3875.00	
Bullnose	5.00			3880.00	70.00 Bottom Packers & Anchor

Total Tool Length: 97.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc

9-16s-37w Wichita,KS

1700 N Waterfront Pkwy
Wichita, KS 67206

KLT #1-9

Job Ticket: 63785

DST#: 1

ATTN: Kevin Kessler

Test Start: 2017.04.08 @ 15:25:51

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

20000 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1488.00	mcw 95%w 5%m	19.215
248.00	mcw 80%w 20%m	3.479
341.00	mw 50%w 50%m	4.783

Total Length: 2077.00 ft Total Volume: 27.477 bbl

Num Fluid Samples: 0

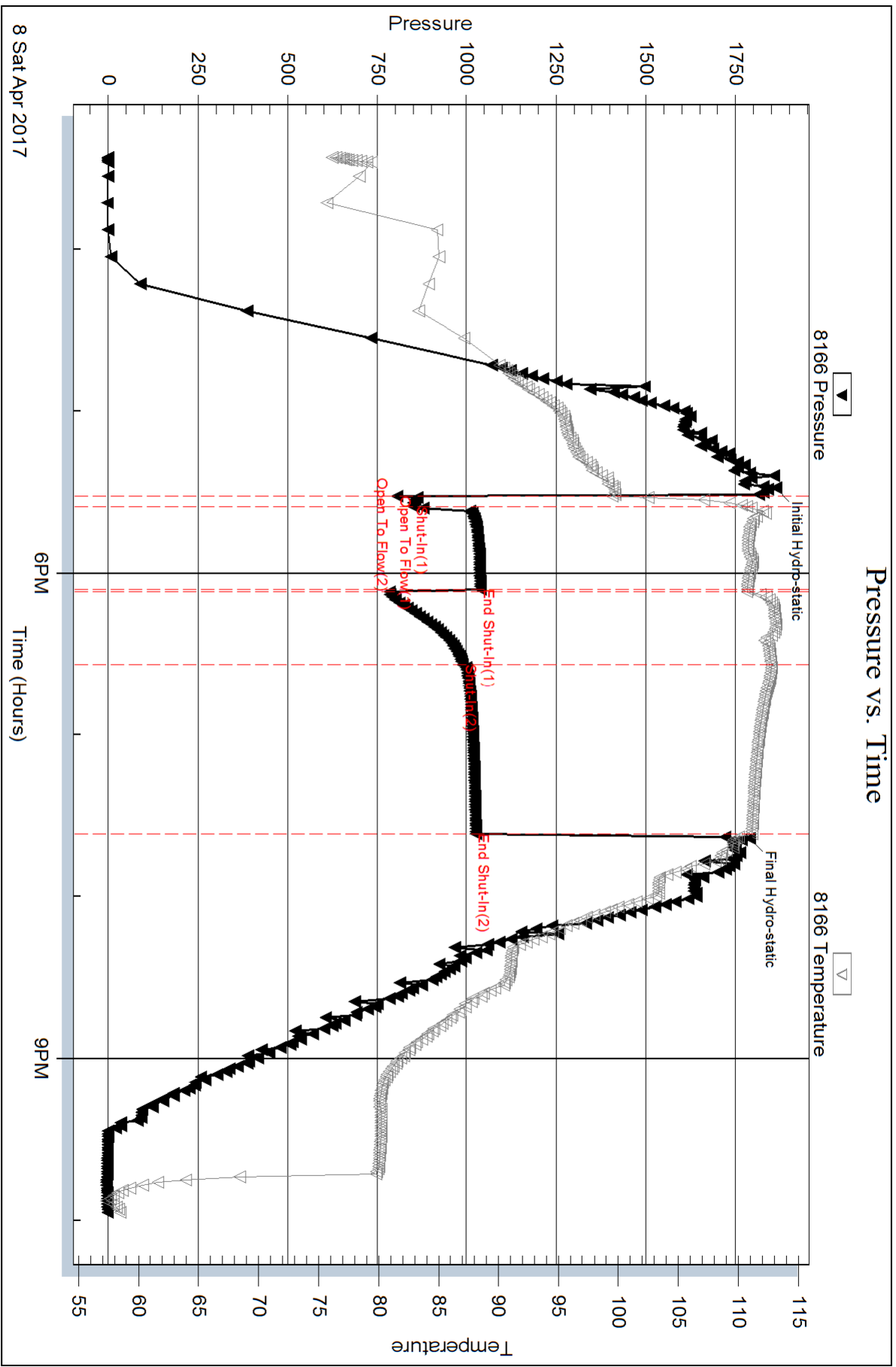
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .33@71=20000



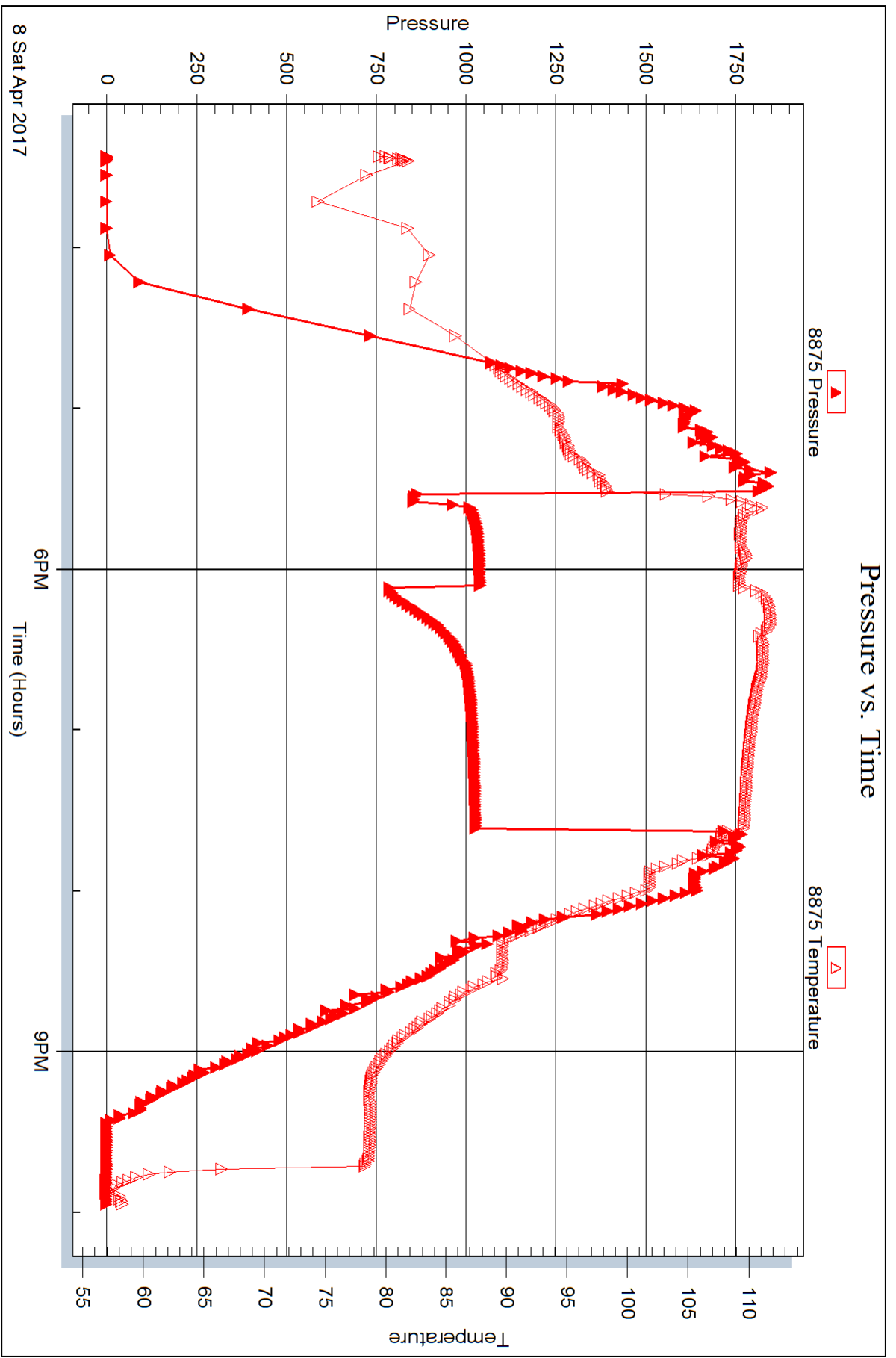
Serial #: 8875

Inside

Mull Drilling Co Inc

KLT#1-9

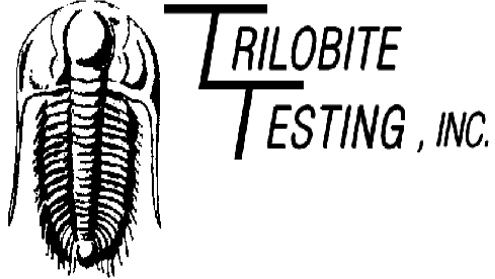
DST Test Number: 1



Triobite Testing, Inc

Ref. No: 63785

Printed: 2017.04.17 @ 09:53:15



DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

KLT #1-9

9-16s-37w Wichita,KS

Start Date: 2017.04.09 @ 11:58:11

End Date: 2017.04.09 @ 19:10:11

Job Ticket #: 63786 DST #: 2

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

Printed: 2017.04.17 @ 09:52:52



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co Inc
 1700 N Waterfront Pkwy
 Wichita, KS 67206
 ATTN: Kevin Kessler

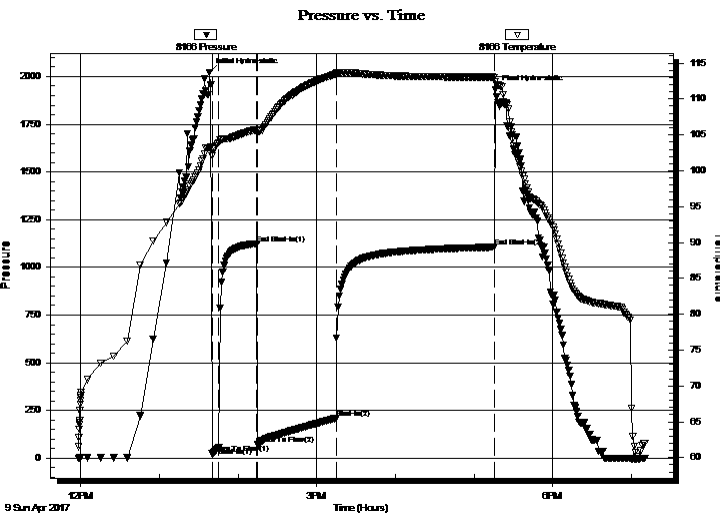
9-16s-37w Wichita,KS
KLT #1-9
 Job Ticket: 63786 **DST#: 2**
 Test Start: 2017.04.09 @ 11:58:11

GENERAL INFORMATION:

Formation: **Toronto**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:40:11
 Time Test Ended: 19:10:11
 Interval: **4020.00 ft (KB) To 4060.00 ft (KB) (TVD)**
 Total Depth: 4060.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 3380.00 ft (KB)
 3367.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 209.79 psig @ 4021.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.09 End Date: 2017.04.09 Last Calib.: 2017.04.09
 Start Time: 11:58:16 End Time: 19:10:10 Time On Btm: 2017.04.09 @ 13:38:11
 Time Off Btm: 2017.04.09 @ 17:16:11

TEST COMMENT: IF: 1/4" blow built to 3"
 IS: No return.
 FF: BOB in 37 min.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2021.58	103.23	Initial Hydro-static
2	23.46	102.07	Open To Flow (1)
7	56.66	103.95	Shut-In(1)
36	1123.70	105.71	End Shut-In(1)
37	71.63	105.14	Open To Flow (2)
97	209.79	113.45	Shut-In(2)
217	1105.84	113.03	End Shut-In(2)
218	1931.87	112.41	Final Hydro-static

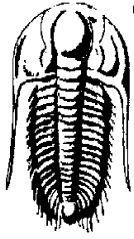
Recovery

Length (ft)	Description	Volume (bbl)
248.00	mcw 90%w 10%m	1.82
144.00	w cm 40%w 60%m	2.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

9-16s-37w Wichita,KS
KLT #1-9
Job Ticket: 63786 **DST#: 2**
Test Start: 2017.04.09 @ 11:58:11

Tool Information

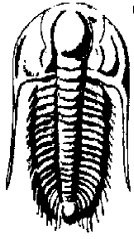
Drill Pipe:	Length: 3833.00 ft	Diameter: 3.80 inches	Volume: 53.77 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 54.67 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4020.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	67.00 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			3994.00	
Shut In Tool	5.00			3999.00	
Hydraulic tool	5.00			4004.00	
Jars	5.00			4009.00	
Safety Joint	2.00			4011.00	
Packer	5.00			4016.00	27.00 Bottom Of Top Packer
Packer	4.00			4020.00	
Stubb	1.00			4021.00	
Recorder	0.00	8875	Inside	4021.00	
Recorder	0.00	8166	Outside	4021.00	
Perforations	1.00			4022.00	
Change Over Sub	1.00			4023.00	
Drill Pipe	31.00			4054.00	
Change Over Sub	1.00			4055.00	
Bullnose	5.00			4060.00	40.00 Bottom Packers & Anchor

Total Tool Length: 67.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc

9-16s-37w Wichita,KS

1700 N Waterfront Pkwy
Wichita, KS 67206

KLT #1-9

Job Ticket: 63786

DST#: 2

ATTN: Kevin Kessler

Test Start: 2017.04.09 @ 11:58:11

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

25000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
248.00	mcw 90%w 10%m	1.821
144.00	wcm 40%w 60%m	2.020

Total Length: 392.00 ft Total Volume: 3.841 bbl

Num Fluid Samples: 0

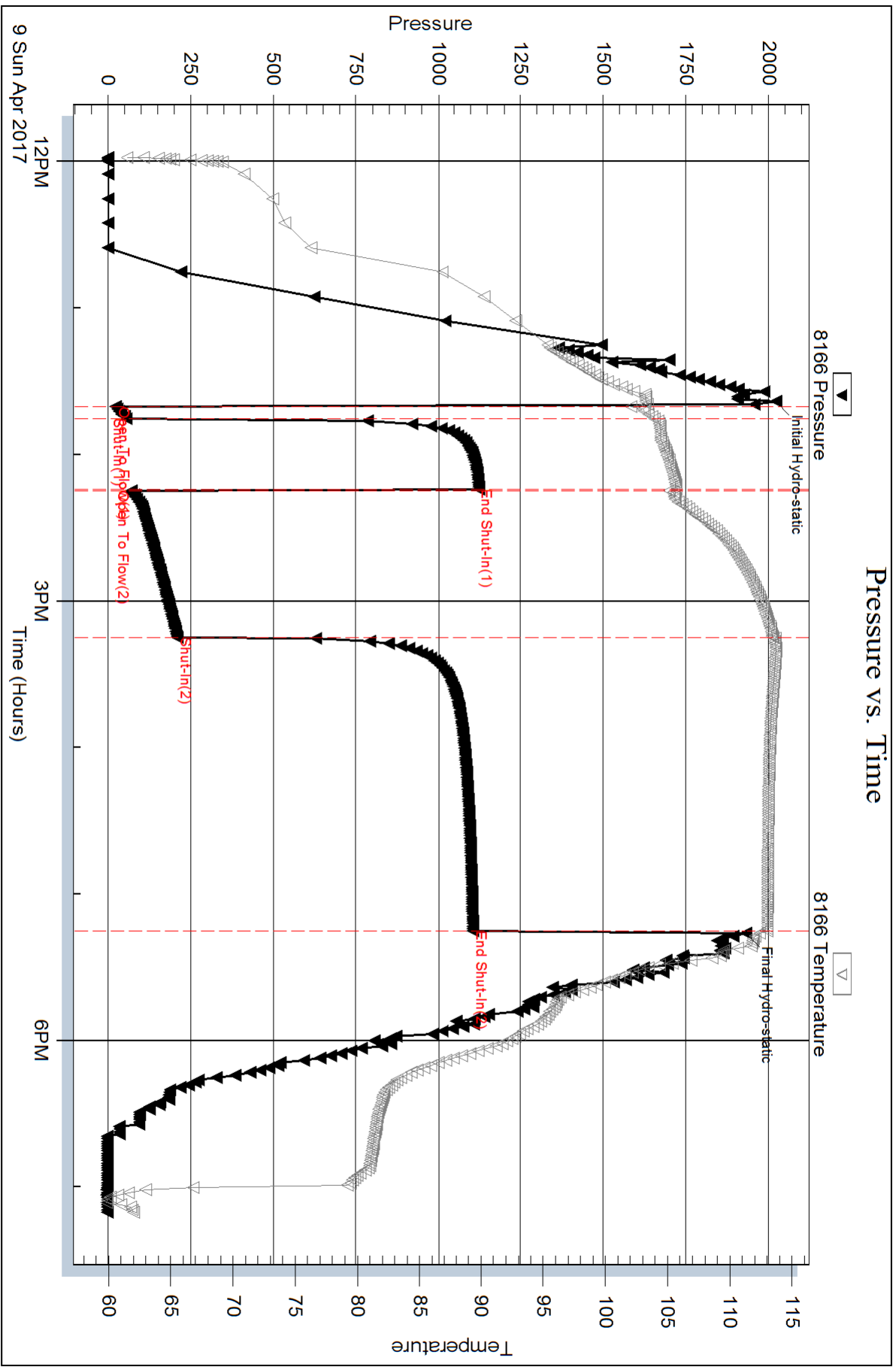
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .29@67=25000



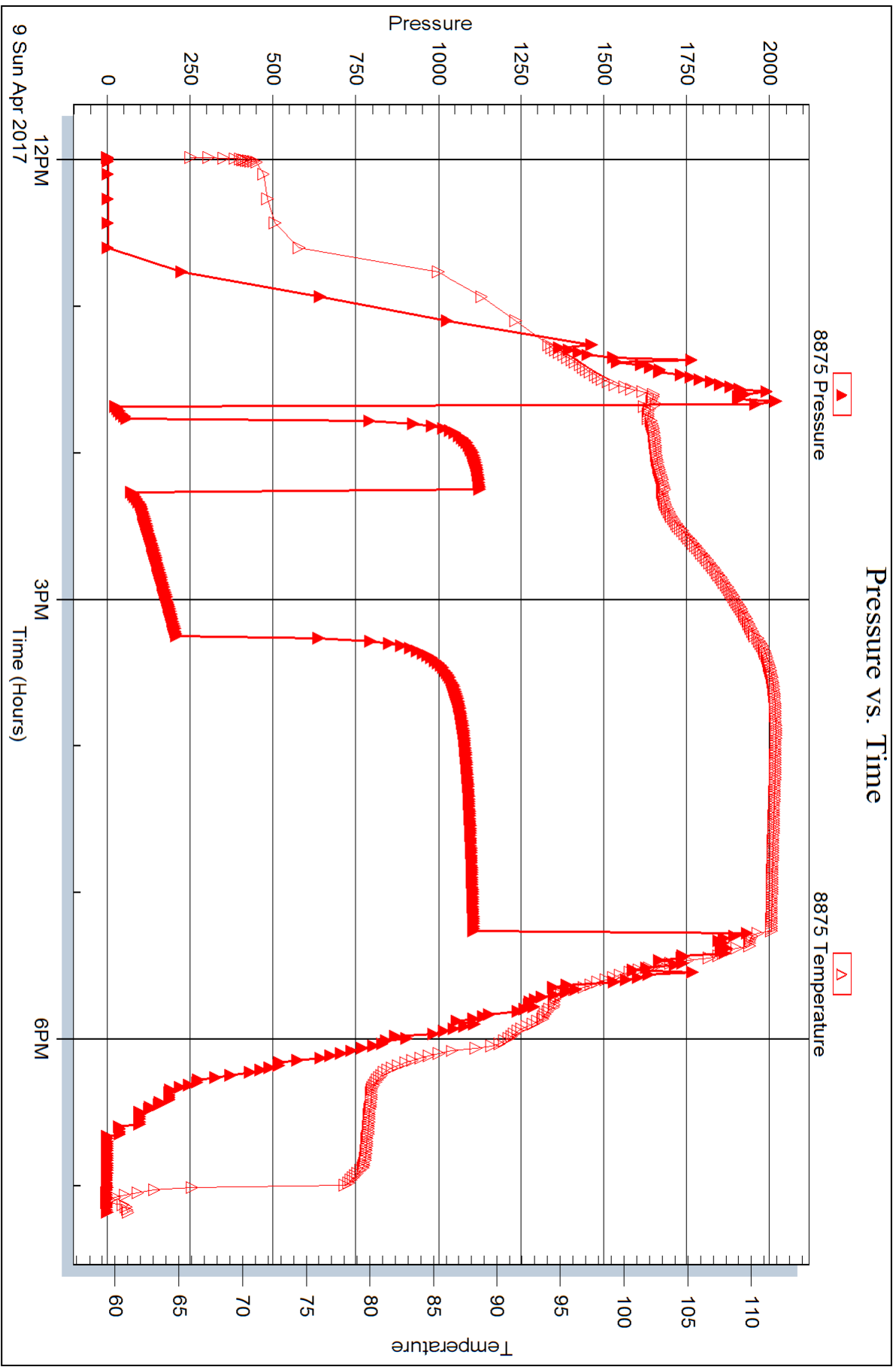
Serial #: 8875

Inside

Mull Drilling Co Inc

KLT#1-9

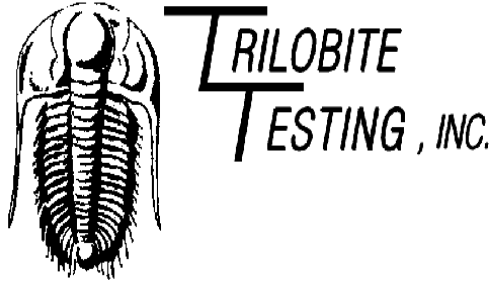
DST Test Number: 2



Triobite Testing, Inc

Ref. No: 63786

Printed: 2017.04.17 @ 09:52:53



DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

KLT #1-9

9-16s-37w Wichita,KS

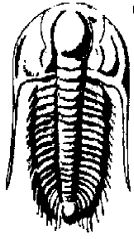
Start Date: 2017.04.10 @ 02:07:49

End Date: 2017.04.10 @ 10:25:19

Job Ticket #: 63787 DST #: 3

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

Printed: 2017.04.17 @ 09:52:27



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co Inc
 1700 N Waterfront Pkwy
 Wichita, KS 67206
 ATTN: Kevin Kessler

9-16s-37w Wichita,KS
KLT #1-9
 Job Ticket: 63787 **DST#: 3**
 Test Start: 2017.04.10 @ 02:07:49

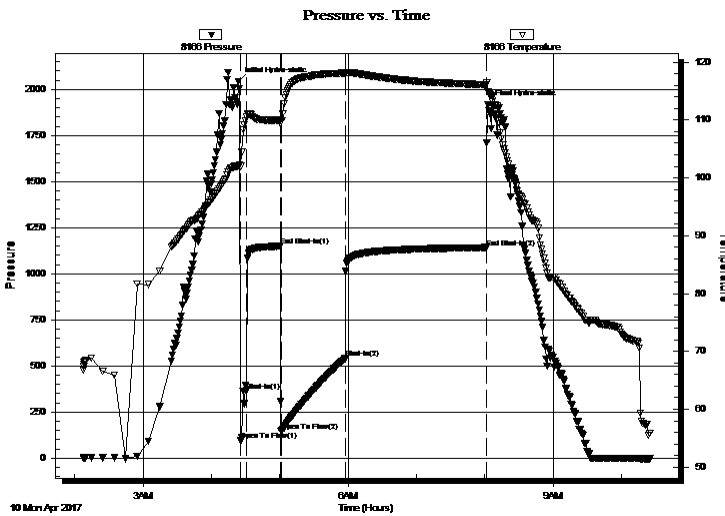
GENERAL INFORMATION:

Formation: **LKC A**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:25:49
 Time Test Ended: 10:25:19
 Interval: **4060.00 ft (KB) To 4090.00 ft (KB) (TVD)**
 Total Depth: 4090.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 3380.00 ft (KB)
 3367.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 540.23 psig @ 4061.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.10 End Date: 2017.04.10 Last Calib.: 2017.04.10
 Start Time: 02:07:54 End Time: 10:25:18 Time On Btm: 2017.04.10 @ 04:23:49
 Time Off Btm: 2017.04.10 @ 08:02:49

TEST COMMENT: IF: BOB in 5 min.
 IS: No return.
 FF: BOB in 5 min.
 FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2041.36	102.03	Initial Hydro-static
2	94.69	101.97	Open To Flow (1)
7	365.19	110.53	Shut-In(1)
37	1149.52	109.99	End Shut-In(1)
38	145.85	109.76	Open To Flow (2)
94	540.23	118.11	Shut-In(2)
218	1141.86	116.11	End Shut-In(2)
219	1918.67	114.96	Final Hydro-static

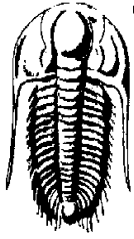
Recovery

Length (ft)	Description	Volume (bbl)
682.00	mcw 90%w 10%m	7.91
248.00	mcw 70%w 30%m	3.48
231.00	w cm 40%w 60%m	3.24

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

9-16s-37w Wichita,KS
KLT #1-9
Job Ticket: 63787 **DST#: 3**
Test Start: 2017.04.10 @ 02:07:49

Tool Information

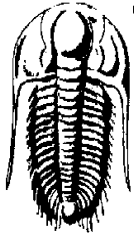
Drill Pipe:	Length: 3864.00 ft	Diameter: 3.80 inches	Volume: 54.20 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 55.10 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4060.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	57.00 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			4034.00	
Shut In Tool	5.00			4039.00	
Hydraulic tool	5.00			4044.00	
Jars	5.00			4049.00	
Safety Joint	2.00			4051.00	
Packer	5.00			4056.00	27.00 Bottom Of Top Packer
Packer	4.00			4060.00	
Stubb	1.00			4061.00	
Recorder	0.00	8875	Inside	4061.00	
Recorder	0.00	8166	Outside	4061.00	
Perforations	24.00			4085.00	
Bullnose	5.00			4090.00	30.00 Bottom Packers & Anchor

Total Tool Length: 57.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

9-16s-37w Wichita,KS
KLT #1-9
Job Ticket: 63787 **DST#: 3**
Test Start: 2017.04.10 @ 02:07:49

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 23000 ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.19 in ³	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 4000.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

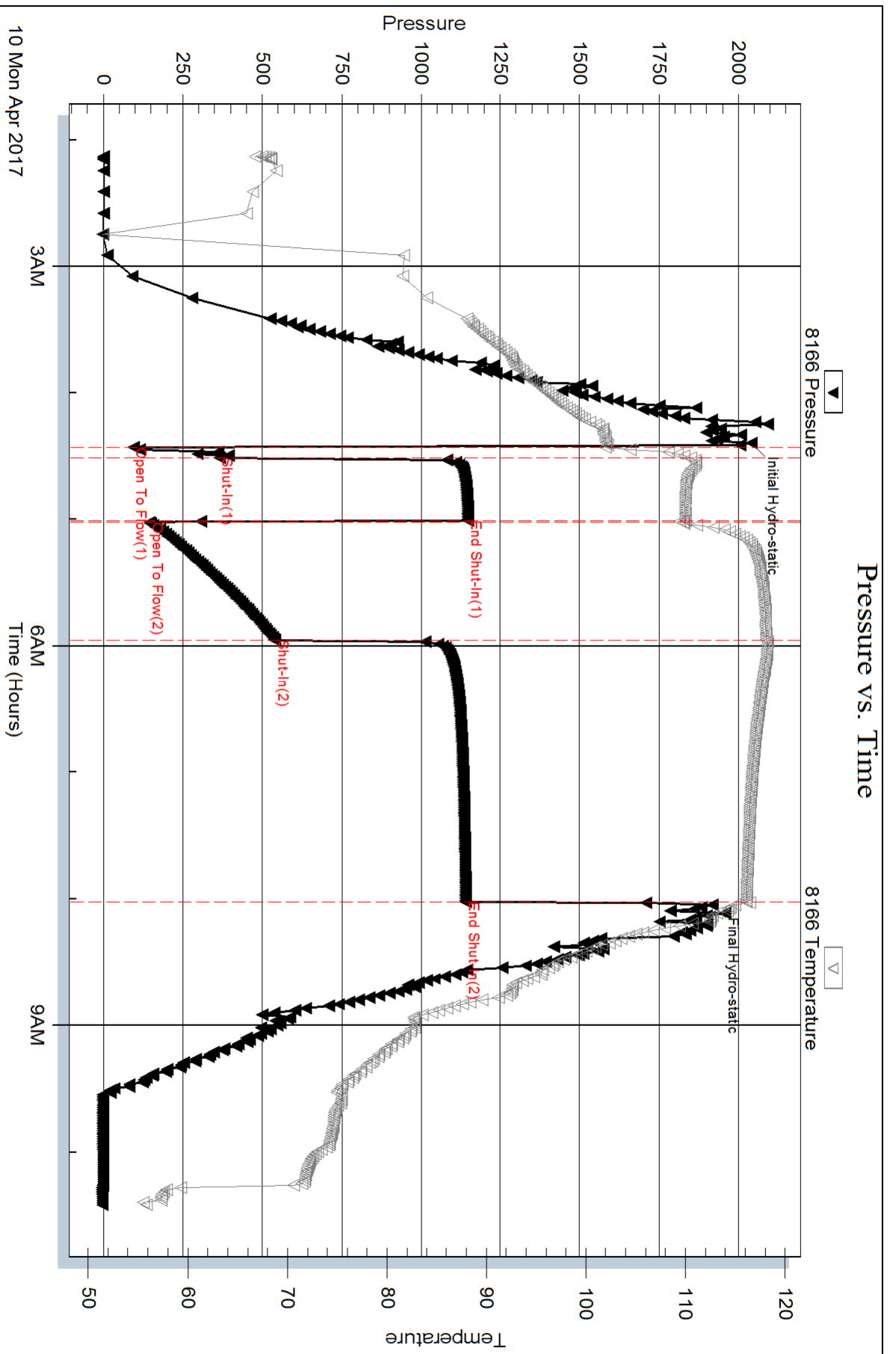
Length ft	Description	Volume bbl
682.00	mcw 90%w 10%m	7.909
248.00	mcw 70%w 30%m	3.479
231.00	wcm 40%w 60%m	3.240

Total Length: 1161.00 ft Total Volume: 14.628 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: .40@52=23000



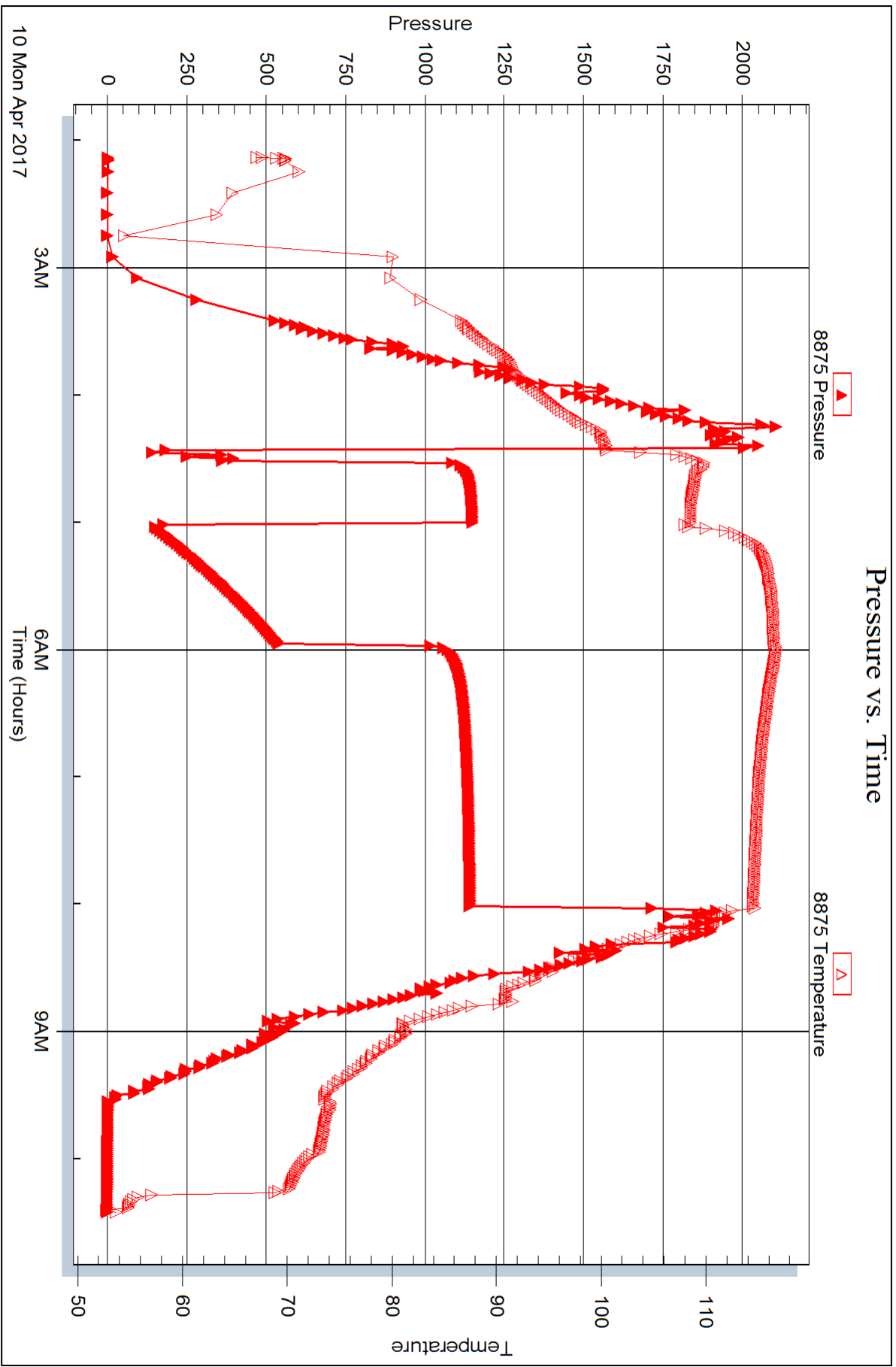
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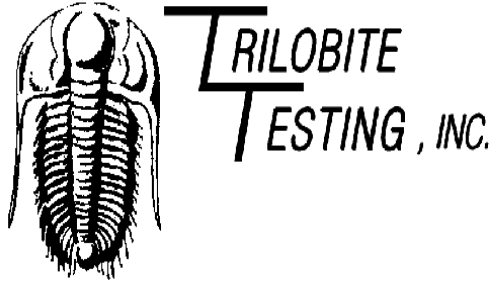
Inside

Mull Drilling Co Inc

KLT#1-9

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

KLT #1-9

9-16s-37w Wichita,KS

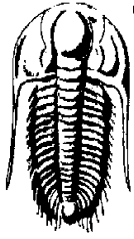
Start Date: 2017.04.11 @ 07:25:36

End Date: 2017.04.11 @ 14:56:06

Job Ticket #: 63788 DST #: 4

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

Printed: 2017.04.17 @ 09:52:04



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co Inc
 1700 N Waterfront Pkwy
 Wichita, KS 67206
 ATTN: Kevin Kessler

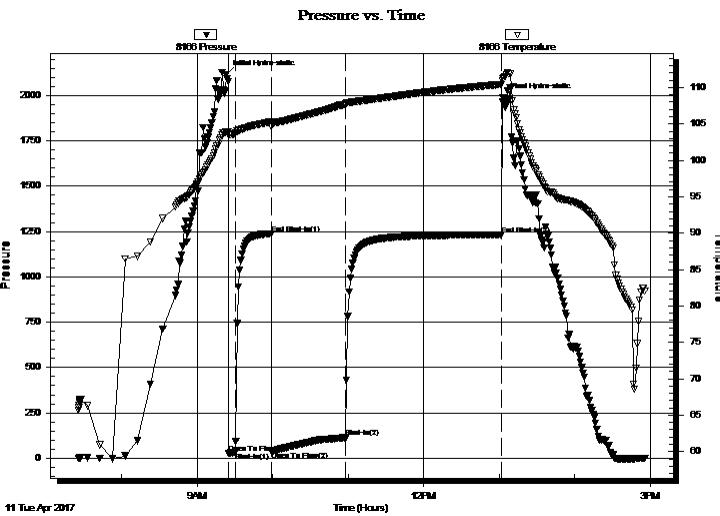
9-16s-37w Wichita, KS
KLT #1-9
 Job Ticket: 63788 **DST#: 4**
 Test Start: 2017.04.11 @ 07:25:36

GENERAL INFORMATION:

Formation: **LKC H-1**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 09:25:06 Tester: Brandon Turley
 Time Test Ended: 14:56:06 Unit No: 79
 Interval: **4240.00 ft (KB) To 4320.00 ft (KB) (TVD)** Reference Elevations: 3380.00 ft (KB)
 Total Depth: 4320.00 ft (KB) (TVD) 3367.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 13.00 ft

Serial #: 8166 Outside
 Press@RunDepth: 113.15 psig @ 4241.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.11 End Date: 2017.04.11 Last Calib.: 2017.04.11
 Start Time: 07:25:41 End Time: 14:56:05 Time On Btm: 2017.04.11 @ 09:23:06
 Time Off Btm: 2017.04.11 @ 13:03:06

TEST COMMENT: IF: Surface blow built to 1 1/2"
 IS: No return.
 FF: Surface blow built to 5"
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2114.54	103.91	Initial Hydro-static
2	25.03	103.45	Open To Flow (1)
7	33.14	103.69	Shut-In(1)
36	1238.12	105.30	End Shut-In(1)
36	38.40	104.60	Open To Flow (2)
95	113.15	107.70	Shut-In(2)
219	1233.04	110.43	End Shut-In(2)
220	1987.46	111.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	mcw 70%w 30%m	0.61
93.00	w cm 10%w 90%m	0.78

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

9-16s-37w Wichita,KS
KLT #1-9
Job Ticket: 63788 **DST#: 4**
Test Start: 2017.04.11 @ 07:25:36

Tool Information

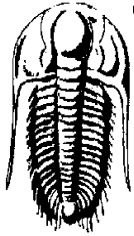
Drill Pipe:	Length: 4053.00 ft	Diameter: 3.80 inches	Volume: 56.85 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 85000.00 lb
			Total Volume: 57.75 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4240.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	80.00 ft			
Tool Length:	107.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Stubb	1.00			4214.00	
Shut In Tool	5.00			4219.00	
Hydraulic tool	5.00			4224.00	
Jars	5.00			4229.00	
Safety Joint	2.00			4231.00	
Packer	5.00			4236.00	27.00 Bottom Of Top Packer
Packer	4.00			4240.00	
Stubb	1.00			4241.00	
Recorder	0.00	8875	Inside	4241.00	
Recorder	0.00	8166	Outside	4241.00	
Perforations	9.00			4250.00	
Change Over Sub	1.00			4251.00	
Drill Pipe	63.00			4314.00	
Change Over Sub	1.00			4315.00	
Bullnose	5.00			4320.00	80.00 Bottom Packers & Anchor

Total Tool Length: 107.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc

9-16s-37w Wichita,KS

1700 N Waterfront Pkwy
Wichita, KS 67206

KLT #1-9

Job Ticket: 63788

DST#: 4

ATTN: Kevin Kessler

Test Start: 2017.04.11 @ 07:25:36

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

20000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	mcw 70%w 30%m	0.610
93.00	wcm 10%w 90%m	0.776

Total Length: 217.00 ft Total Volume: 1.386 bbl

Num Fluid Samples: 0

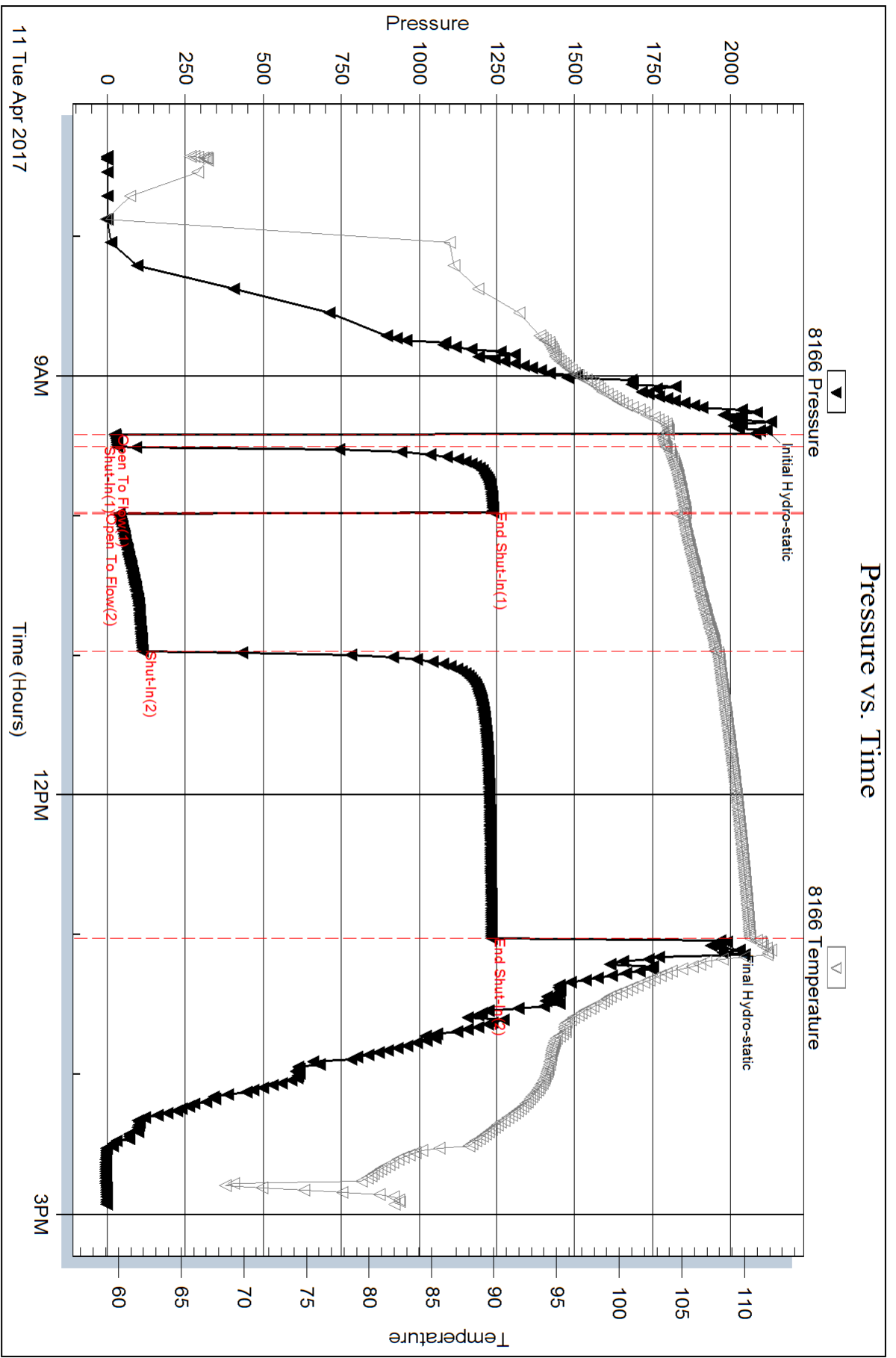
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .30@78=20000



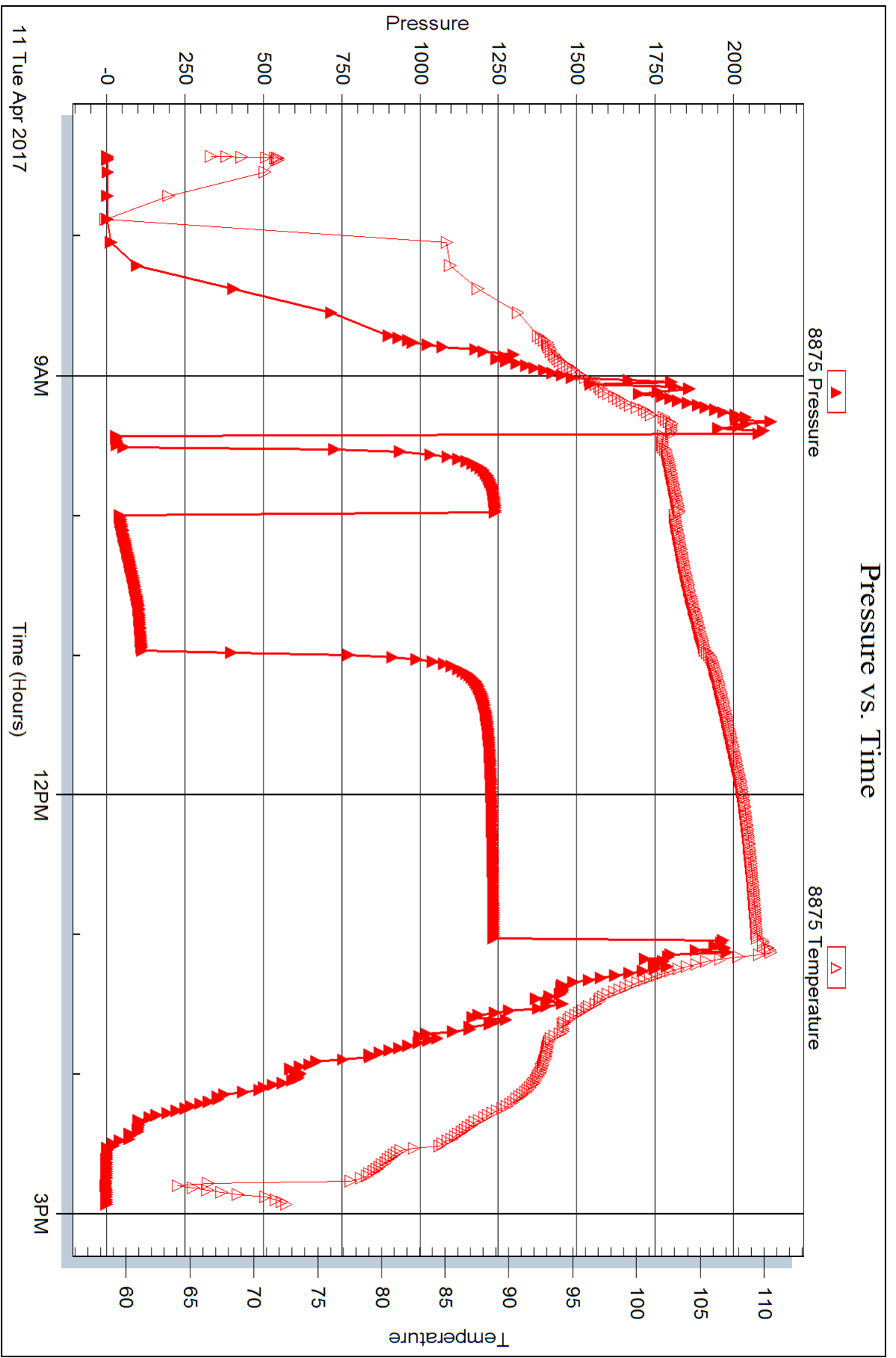
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Inside

Mull Drilling Co Inc

KLT#1-9

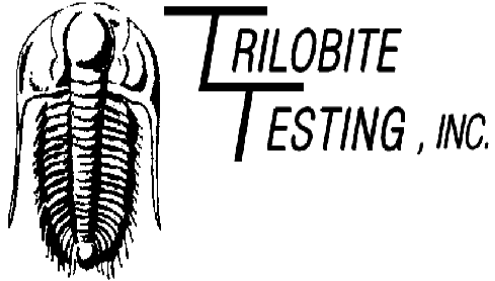
DST Test Number: 4



Triobite Testing, Inc

Ref. No: 63788

Printed: 2017.04.17 @ 09:52:05



DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

KLT #1-9

9-16s-37w Wichita,KS

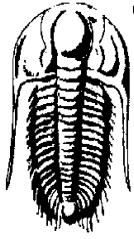
Start Date: 2017.04.12 @ 11:06:33

End Date: 2017.04.12 @ 18:35:03

Job Ticket #: 63789 DST #: 5

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

Printed: 2017.04.17 @ 09:51:41



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

9-16s-37w Wichita,KS

KLT #1-9

Job Ticket: 63789

DST#: 5

Test Start: 2017.04.12 @ 11:06:33

GENERAL INFORMATION:

Formation: **Marmaton**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:03:33
 Time Test Ended: 18:35:03
 Interval: **4450.00 ft (KB) To 4530.00 ft (KB) (TVD)**
 Total Depth: 4530.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 3380.00 ft (KB)
 3367.00 ft (CF)
 KB to GR/CF: 13.00 ft

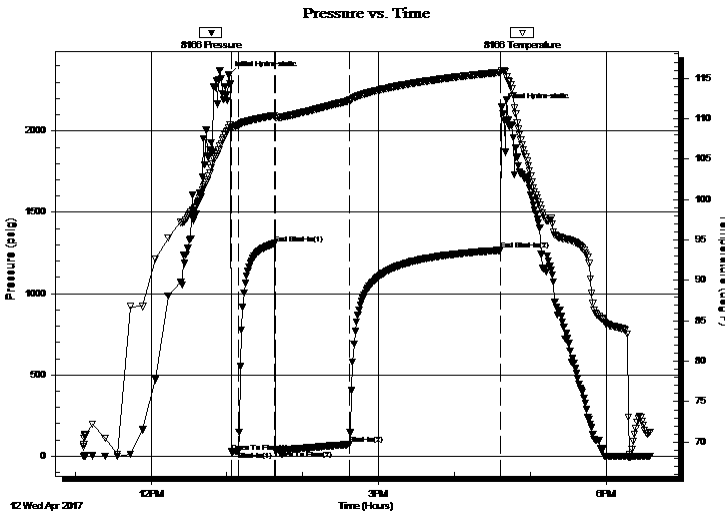
Serial #: 8166

Outside

Press@RunDepth: 71.67 psig @ 4451.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.12 End Date: 2017.04.12 Last Calib.: 2017.04.12
 Start Time: 11:06:38 End Time: 18:35:02 Time On Btm: 2017.04.12 @ 13:01:33
 Time Off Btm: 2017.04.12 @ 16:37:33

TEST COMMENT: IF: Surface built to 1/2"
 IS: No return.
 FF: Surface built to 3/4"
 FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2343.28	108.90	Initial Hydro-static
2	26.53	108.78	Open To Flow (1)
8	30.58	109.14	Shut-In(1)
36	1308.43	110.40	End Shut-In(1)
37	35.46	110.09	Open To Flow (2)
96	71.67	112.23	Shut-In(2)
215	1266.39	115.74	End Shut-In(2)
216	2146.97	115.97	Final Hydro-static

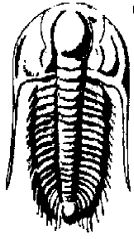
Recovery

Length (ft)	Description	Volume (bbl)
62.00	mud oil spots 100%m	0.30
62.00	mcw 80%w 20%m	0.30

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

9-16s-37w Wichita,KS
KLT #1-9
Job Ticket: 63789 **DST#: 5**
Test Start: 2017.04.12 @ 11:06:33

Tool Information

Drill Pipe:	Length: 4246.00 ft	Diameter: 3.80 inches	Volume: 59.56 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: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 60.46 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	70000.00 lb
Depth to Top Packer:	4450.00 ft			Final	70000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	80.00 ft				
Tool Length:	107.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Stubb	1.00			4424.00	
Shut In Tool	5.00			4429.00	
Hydraulic tool	5.00			4434.00	
Jars	5.00			4439.00	
Safety Joint	2.00			4441.00	
Packer	5.00			4446.00	27.00 Bottom Of Top Packer
Packer	4.00			4450.00	
Stubb	1.00			4451.00	
Recorder	0.00	8875	Inside	4451.00	
Recorder	0.00	8166	Outside	4451.00	
Perforations	9.00			4460.00	
Change Over Sub	1.00			4461.00	
Drill Pipe	63.00			4524.00	
Change Over Sub	1.00			4525.00	
Bullnose	5.00			4530.00	80.00 Bottom Packers & Anchor

Total Tool Length: 107.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc

9-16s-37w Wichita,KS

1700 N Waterfront Pkwy
Wichita, KS 67206

KLT #1-9

Job Ticket: 63789

DST#: 5

ATTN: Kevin Kessler

Test Start: 2017.04.12 @ 11:06:33

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

21500 ppm

Viscosity: 70.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 7500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	mud oil spots 100%m	0.305
62.00	mcw 80%w 20%m	0.305

Total Length: 124.00 ft Total Volume: 0.610 bbl

Num Fluid Samples: 0

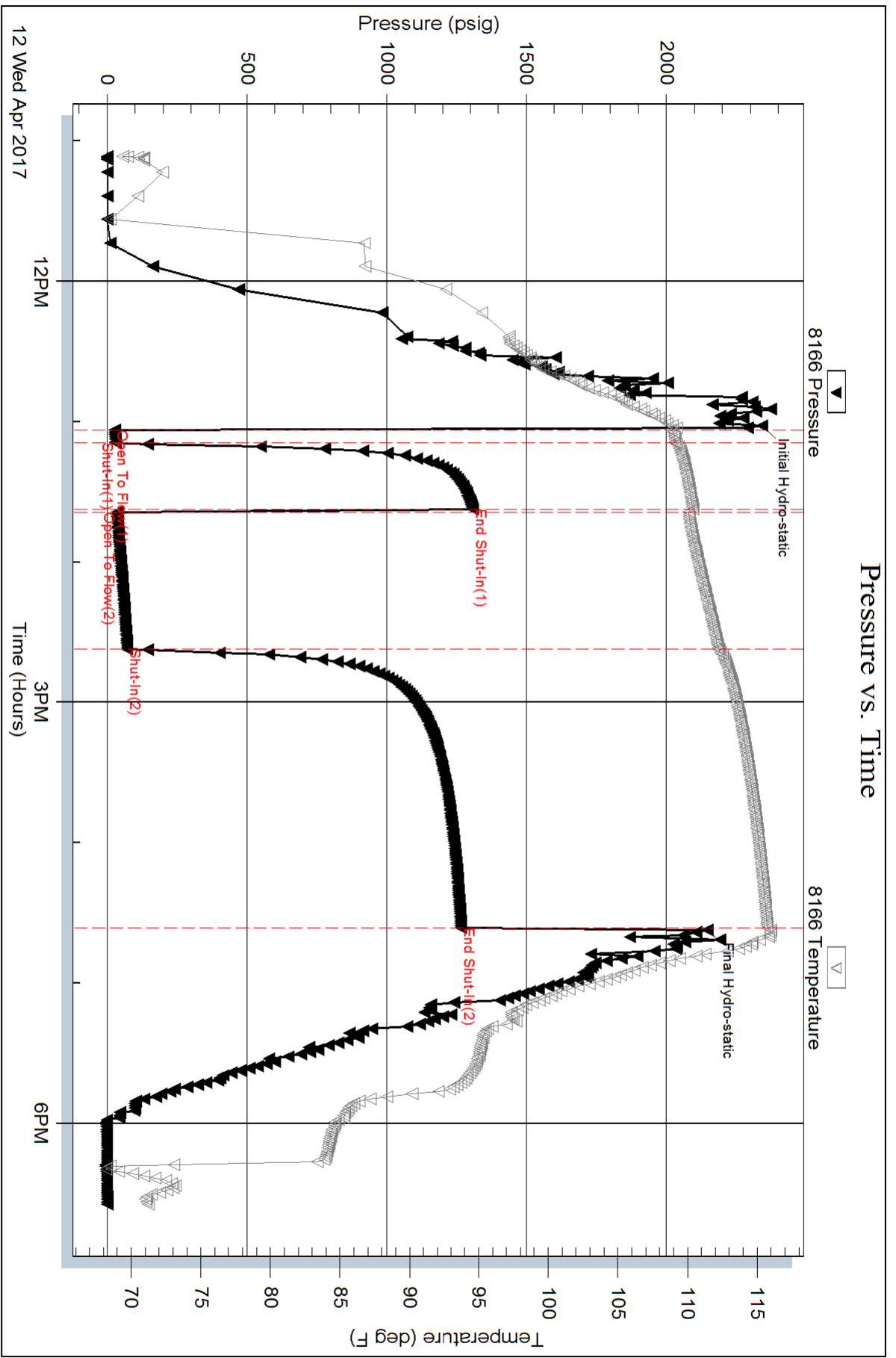
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .28@80=21500



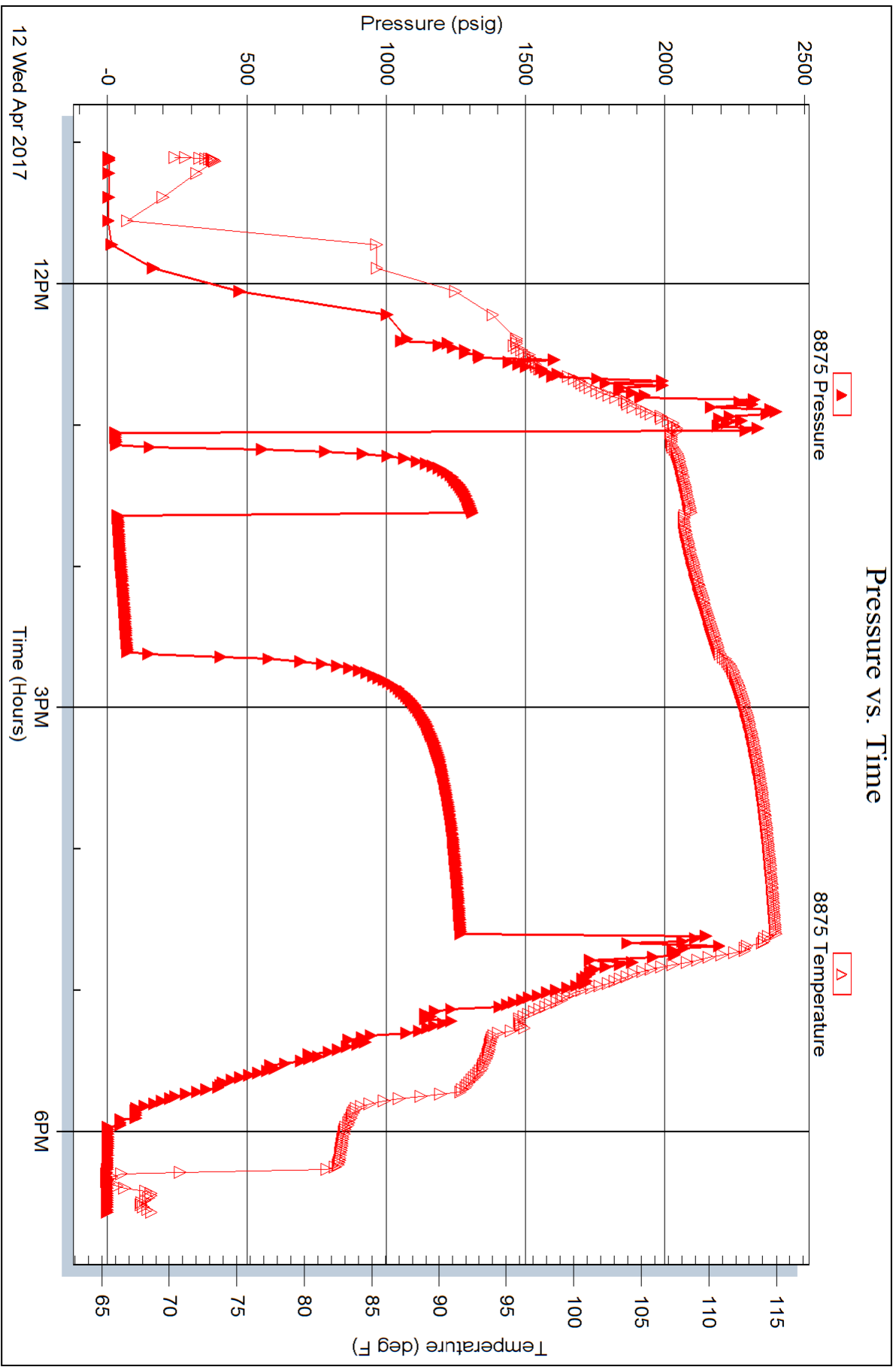
Serial #: 8875

Inside

Mull Drilling Co Inc

KLT#1-9

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 63789

Printed: 2017.04.17 @ 09:51:42



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63785**

Well Name & No. KLT #1-9 Test No. 1 Date 4-8-17
 Company Mull Drilling Co Inc Elevation 3380 KB 3367 GL
 Address 1700 N Waterfront Pkwy Wichita, KS 67206
 Co. Rep / Geo. Kevin Kessler Rig Duke 7
 Location: Sec. 9 Twp. 16S Rge. 37W Co. Wichita State KS

Interval Tested 3810 3880 Zone Tested Topeka
 Anchor Length 70 Drill Pipe Run 3614 Mud Wt. 8.6
 Top Packer Depth 3805 Drill Collars Run 182 Vis 63
 Bottom Packer Depth 3810 Wt. Pipe Run — WL 6.4
 Total Depth 3880 Chlorides 3200 ppm System LCM 2

Blow Description IF: BoB in 30 sec.
IS: No return.
FK: BoB in 30 sec.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>341</u>	<u>MW</u>		<u>50</u>	<u>50</u>	
<u>248</u>	<u>MLW</u>		<u>80</u>	<u>20</u>	
<u>1488</u>	<u>MLW</u>		<u>95</u>	<u>5</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2077 BHT 111 Gravity — API RW .33 @ 71 °F Chlorides 20,000 ppm

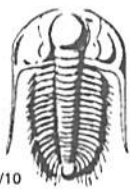
(A) Initial Hydrostatic 1861 Test 1050 T-On Location 14:00
 (B) First Initial Flow 804 Jars 250 T-Started 15:25
 (C) First Final Flow 851 Safety Joint 75 T-Open 17:30
 (D) Initial Shut-In 1038 Circ Sub N/C T-Pulled 19:35
 (E) Second Initial Flow 784 Hourly Standby _____ T-Out 22:00
 (F) Second Final Flow 989 Mileage 96-72 Comments _____
 (G) Final Shut-In 1026 Sampler _____
 (H) Final Hydrostatic 1788 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 5
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 60

Sub Total 1447
 Total 1447
 MP/DST Disc't _____

Approved By Kevin Kessler 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. **63786**

Well Name & No. KLT #1-9 Test No. 2 Date 4-9-17
 Company Mull Drilling Co Inc Elevation 3380 KB 3367 GL
 Address _____
 Co. Rep / Geo. Kevin Kessler Rig Duke 7
 Location: Sec. 9 Twp. 165 Rge. 37^w Co. Wichita State KS

Interval Tested 4020 4060 Zone Tested Toronto
 Anchor Length 40 Drill Pipe Run 3833 Mud Wt. 9.1
 Top Packer Depth 4015 Drill Collars Run 182 Vis 57
 Bottom Packer Depth 4020 Wt. Pipe Run _____ WL 7.2
 Total Depth 4060 Chlorides 4000 ppm System LCM 3

Blow Description IF: 1/4 blow built to 3.
IS: No return.
FF: BoB in 37 min.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>144</u>	<u>wcm</u>		<u>40</u>	<u>60</u>	
<u>248</u>	<u>MLW</u>		<u>90</u>	<u>10</u>	
_____	_____	%gas	%oil	%water	%mud
_____	_____	%gas	%oil	%water	%mud
_____	_____	%gas	%oil	%water	%mud

Rec Total 392 BHT 113 Gravity _____ API RW .29 @ 67 °F Chlorides 25,000 ppm

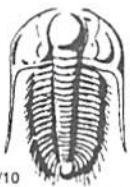
- (A) Initial Hydrostatic 2021 Test 1150
- (B) First Initial Flow 23 Jars 250
- (C) First Final Flow 56 Safety Joint 75
- (D) Initial Shut-In 1123 Circ Sub NIL
- (E) Second Initial Flow 71 Hourly Standby _____
- (F) Second Final Flow 209 Mileage 96-73
- (G) Final Shut-In 1105 Sampler _____
- (H) Final Hydrostatic 1931 Straddle _____
- Shale Packer _____
- Extra Packer _____
- Extra Recorder _____
- Day Standby _____
- Accessibility _____
- Sub Total 1547

T-On Location 11:30
 T-Started 11:58
 T-Open 13:40
 T-Pulled 17:15
 T-Out 19:11

Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1547
 MP/DST Disc't _____

Approved By Kevin Kessler 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. **63787**

Well Name & No. KLT #1-9 Test No. 3 Date 4-10-17
 Company Mull Drilling Co INC Elevation 3380 KB 3369 GL
 Address _____
 Co. Rep / Geo. Kevin Kestler Rig Duke 7
 Location: Sec. 9 Twp. 16S Rge. 37W Co. Wichita State KS

Interval Tested 4060 4090 Zone Tested A
 Anchor Length 30 Drill Pipe Run 3864 Mud Wt. 9.1
 Top Packer Depth 4655 Drill Collars Run 182 Vis 57
 Bottom Packer Depth 4060 Wt. Pipe Run _____ WL 7.2
 Total Depth 4090 Chlorides 4000 ppm System LCM 3

Blow Description IF: BoB in 5 min.
FS: No return.
FF: BoB in 5 min.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>231</u>	<u>WCM</u>		<u>40</u>	<u>60</u>	
<u>248</u>	<u>MLW</u>		<u>70</u>	<u>30</u>	
<u>682</u>	<u>MLW</u>		<u>90</u>	<u>10</u>	
_____	_____				
_____	_____				

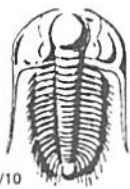
Rec Total 1161 BHT 118 Gravity _____ API RW .40 @ 52° F Chlorides 23,000 ppm

(A) Initial Hydrostatic 2041 Test 1150 T-On Location 8:30
 (B) First Initial Flow 94 Jars 250 T-Started 2:07
 (C) First Final Flow 365 Safety Joint 75 T-Open 4:24
 (D) Initial Shut-In 1149 Circ Sub NIL T-Pulled 7:59
 (E) Second Initial Flow 145 Hourly Standby _____ T-Out 10:24
 (F) Second Final Flow 540 Mileage 96-73 Comments _____
 (G) Final Shut-In 1141 Sampler _____
 (H) Final Hydrostatic 1918 Straddle _____

Shale Packer _____ Ruined Packer 320
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 320
 Day Standby _____ Total 1867
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1547

Approved By Ken Kenh Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged or 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. **63788**

Well Name & No. KLT #1-9 Test No. 4 Date 4-11-17
 Company Mull Drilling Co Inc Elevation 3380 KB 3367 GL
 Address _____
 Co. Rep / Geo. Kevin Kettler Rig Duke 7
 Location: Sec. 9 Twp. 165 Rge. 37W Co. Wichita State Ks

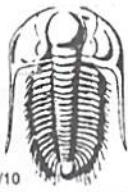
Interval Tested 4240 4320 Zone Tested H-I
 Anchor Length _____ Drill Pipe Run 4053 Mud Wt. 9.2
 Top Packer Depth 4235 Drill Collars Run 182 Vis 59
 Bottom Packer Depth 4240 Wt. Pipe Run _____ WL 8.8
 Total Depth 4320 Chlorides 4400 ppm System LCM 2
 Blow Description IF: Surface blow built to 1 1/2.
IS: No return.
FF: Surface blow built to 5.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>93</u>	<u>wcm</u>		<u>10</u>	<u>90</u>	
<u>124</u>	<u>mcm</u>		<u>70</u>	<u>30</u>	
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____

Rec Total 217 BHT 116 Gravity _____ API RW .30 @ 78 ° F Chlorides 20,000 ppm
 (A) Initial Hydrostatic 2114 Test 1150 T-On Location 4:05
 (B) First Initial Flow 25 Jars 250 T-Started 7:25
 (C) First Final Flow 33 Safety Joint 75 T-Open 9:24
 (D) Initial Shut-In 1238 Circ Sub NIL T-Pulled 12:59
 (E) Second Initial Flow 38 Hourly Standby 80-1h T-Out 15:00
 (F) Second Final Flow 113 Mileage 96-73 Comments on bank at 5:00
 (G) Final Shut-In 1233 Sampler _____ geo never call to
 (H) Final Hydrostatic 1987 Straddle _____ tell me they were
 Shale Packer _____ short tripping
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1627 Sub Total 0
 Total 1627 MP/DST Disc't _____

Approved By Kevin Kettler Our Representative _____

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. **63789**

Well Name & No. KLT #1-9 Test No. 5 Date 4-12-17
 Company Mull Drilling Co Inc Elevation 3380 KB 3367 GL
 Address _____
 Co. Rep / Geo. Kevin Kessler Rig Duke #7
 Location: Sec. 9 Twp. 16S Rge. 37W Co. Wichita State KS

Interval Tested 4450 4530 Zone Tested Maryton
 Anchor Length 80 Drill Pipe Run 4246 Mud Wt. 9.4
 Top Packer Depth 4445 Drill Collars Run 182 Vis 70
 Bottom Packer Depth 4450 Wt. Pipe Run _____ WL 9.6
 Total Depth 4530 Chlorides 7500 ppm System LCM 3

Blow Description IF: Surface built to 1/2.
FS: No return.
FF: Surface built to 3/4.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>mud oil spots</u>			<u>100</u>	
<u>62</u>	<u>MLW</u>		<u>80</u>	<u>20</u>	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Rec Total 124 BHT 115 Gravity _____ API RW .29 @ 80 ° F Chlorides 21,500 ppm

(A) Initial Hydrostatic 2343 Test 1150
 (B) First Initial Flow 26 Jars 250
 (C) First Final Flow 30 Safety Joint 75
 (D) Initial Shut-In 1308 Circ Sub NIL
 (E) Second Initial Flow 35 Hourly Standby _____
 (F) Second Final Flow 71 Mileage 96-X2 144
 (G) Final Shut-In 1266 Sampler _____
 (H) Final Hydrostatic 2146 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby 7 1.5d 19.5h
 Accessibility _____
 Sub Total 1619

T-On Location 10:40
 T-Started 11:06
 T-Open 13:02
 T-Pulled 16:37
 T-Out 18:32
 Comments loaded 4-15
At 2:00 am
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 800
 Total 2419
 MP/DST Disc't _____

Initial Open 5
 Initial Shut-In 30
 Final Flow 60
 Final Shut-In 120
 Approved By Kevin Kessler 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.