



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Ken #2-17

17-1s-35w Rawlins, KS

Start Date: 2015.10.13 @ 08:05:00

End Date: 2015.10.13 @ 14:53:15

Job Ticket #: 65228 DST #: 1

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

Printed: 2015.10.16 @ 17:13:31



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

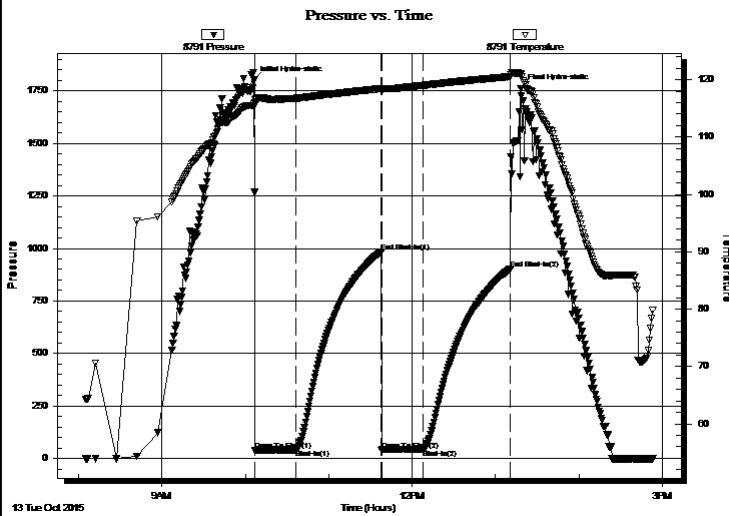
17-1s-35w Rawlins, KS
Ken #2-17
 Job Ticket: 65228 **DST#: 1**
 Test Start: 2015.10.13 @ 08:05:00

GENERAL INFORMATION:

Formation: **Foraker**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:06:45
 Time Test Ended: 14:53:15
 Interval: **3677.00 ft (KB) To 3725.00 ft (KB) (TVD)**
 Total Depth: 3725.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 3214.00 ft (KB)
 3203.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 8791 Inside
 Press@RunDepth: 43.06 psig @ 3678.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.10.13 End Date: 2015.10.13 Last Calib.: 2015.10.13
 Start Time: 08:05:05 End Time: 14:53:14 Time On Btm: 2015.10.13 @ 10:06:15
 Time Off Btm: 2015.10.13 @ 13:18:00

TEST COMMENT: 30 - IF: 2 1/2" surge blow at open, built slightly, slowly died back to 1 3/4" at close
 60 - ISI: No blow back
 30 - FF: No blow
 60 - FSI: No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1801.22	115.71	Initial Hydro-static
1	40.05	115.93	Open To Flow (1)
31	42.11	116.75	Shut-In(1)
92	984.72	118.45	End Shut-In(1)
92	40.23	117.88	Open To Flow (2)
122	43.06	118.99	Shut-In(2)
185	903.48	120.53	End Shut-In(2)
192	1759.70	121.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	Mud 100%	0.30
0.00	Oil spots in tool	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

17-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Ken #2-17

Job Ticket: 65228

DST#: 1

ATTN: Jeff Christian

Test Start: 2015.10.13 @ 08:05:00

Tool Information

Drill Pipe:	Length: 3496.00 ft	Diameter: 3.80 inches	Volume: 49.04 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: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 49.94 bbl</u>	Tool Chased 4.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3677.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	76.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: tool chased 4-5' to bottom at open - hole lost 2 - 3' of mud at top - 2 1/2" surge blow at open tool landed 8-9' low

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

Shut In Tool	5.00			3654.00	
Hydraulic tool	5.00			3659.00	
Jars	5.00			3664.00	
Safety Joint	3.00			3667.00	
Packer	5.00			3672.00	28.00 Bottom Of Top Packer
Packer	5.00			3677.00	
Stubb	1.00			3678.00	
Recorder	0.00	8791	Inside	3678.00	
Recorder	0.00	8366	Outside	3678.00	
Perforations	10.00			3688.00	
Blank Spacing	34.00			3722.00	
Bullnose	3.00			3725.00	48.00 Bottom Packers & Anchor

Total Tool Length: 76.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

17-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Ken #2-17

Job Ticket: 65228

DST#: 1

ATTN: Jeff Christian

Test Start: 2015.10.13 @ 08:05:00

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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	Mud 100%	0.295
0.00	Oil spots in tool	0.000

Total Length: 60.00 ft Total Volume: 0.295 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

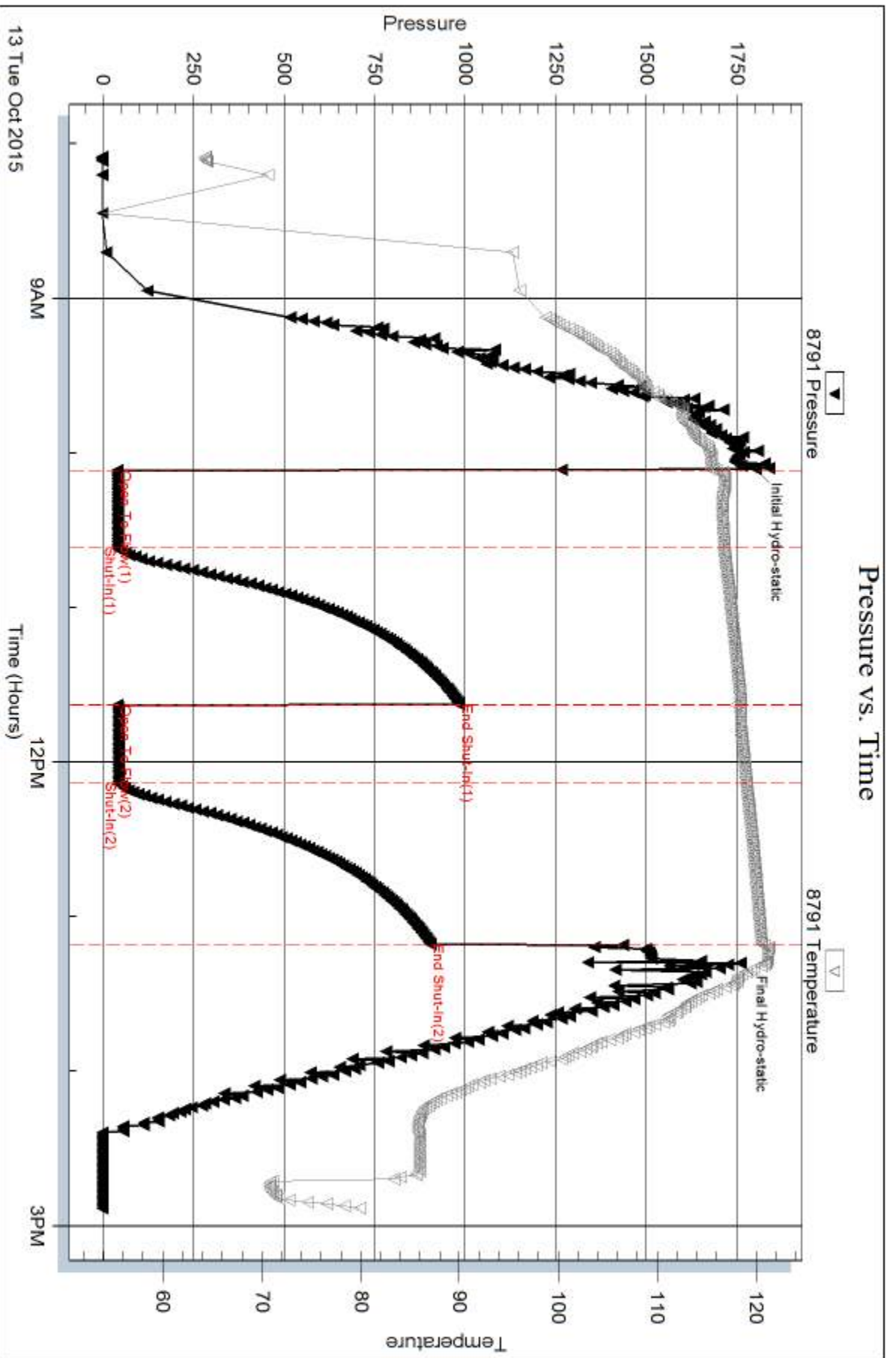
Serial #:

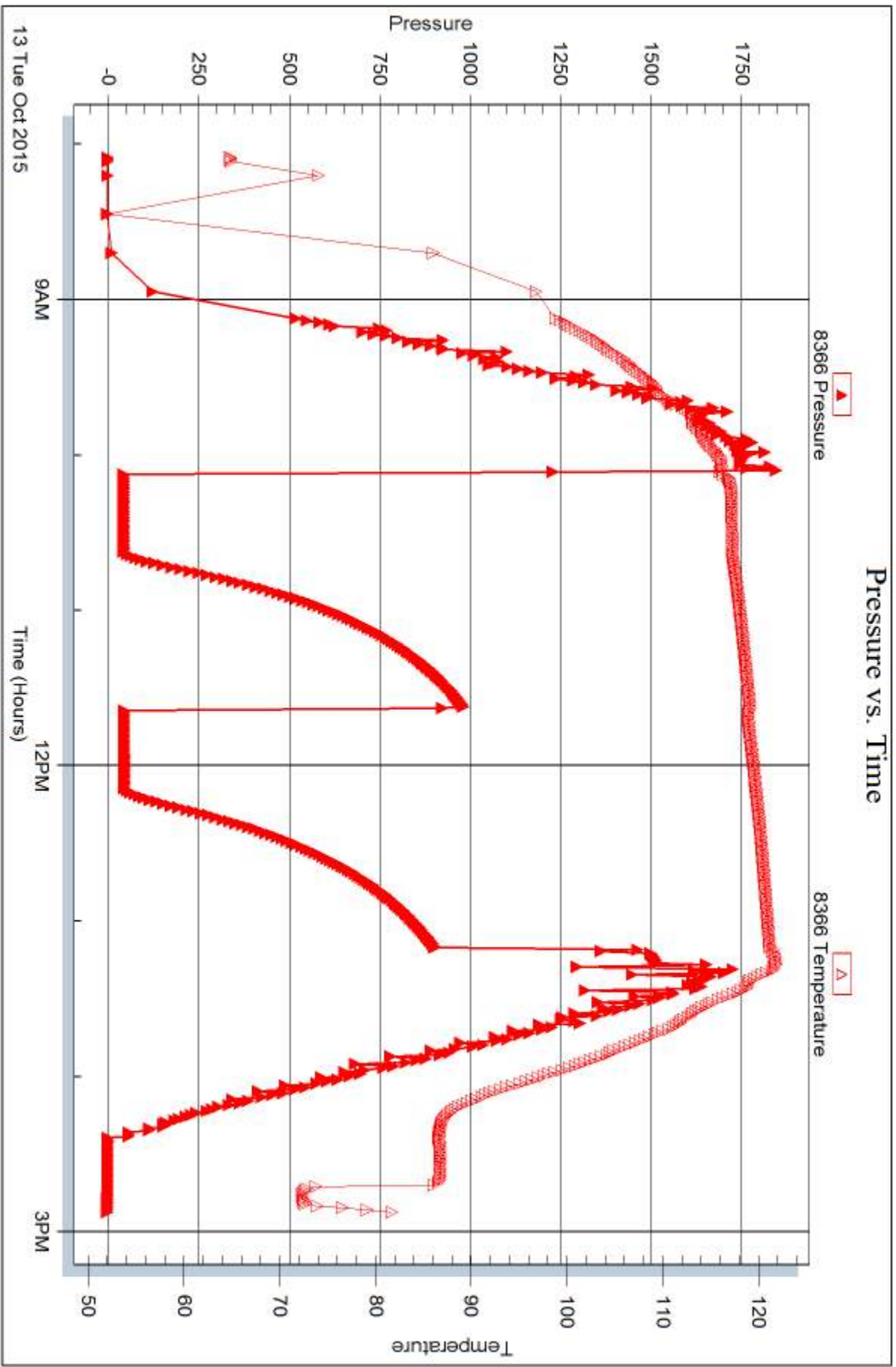
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Ken #2-17

17-1s-35w Rawlins, KS

Start Date: 2015.10.15 @ 00:37:00

End Date: 2015.10.15 @ 07:48:00

Job Ticket #: 65229 DST #: 2

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

Printed: 2015.10.16 @ 17:13:10



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

17-1s-35w Rawlins, KS

Ken #2-17

Job Ticket: 65229 **DST#: 2**
 Test Start: 2015.10.15 @ 00:37:00

GENERAL INFORMATION:

Formation: **LKC "A - D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:38:00
 Time Test Ended: 07:48:00
 Interval: **4079.00 ft (KB) To 4216.00 ft (KB) (TVD)**
 Total Depth: 4216.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 3214.00 ft (KB)
 3203.00 ft (CF)
 KB to GR/CF: 11.00 ft

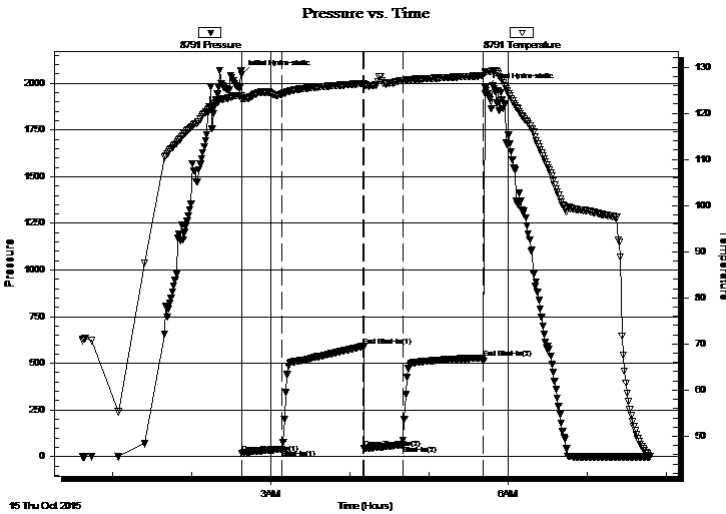
Serial #: 8791

Inside

Press@RunDepth: 62.88 psig @ 4080.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.10.15 End Date: 2015.10.15 Last Calib.: 2015.10.15
 Start Time: 00:37:05 End Time: 07:47:59 Time On Btm: 2015.10.15 @ 02:37:45
 Time Off Btm: 2015.10.15 @ 05:42:45

TEST COMMENT: 30 - IF: Blow built to 1 3/4"
 60 - ISI: No blow back
 30 - FF: No blow
 60 - FSI: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2047.74	123.88	Initial Hydro-static
1	18.33	122.83	Open To Flow (1)
31	40.42	124.17	Shut-In(1)
93	592.95	126.45	End Shut-In(1)
93	42.23	126.25	Open To Flow (2)
122	62.88	127.12	Shut-In(2)
184	527.50	128.15	End Shut-In(2)
185	1975.59	128.94	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
100.00	Mud 100%	0.49
0.00	trace of oil in bottom	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.

17-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Ken #2-17

Job Ticket: 65229

DST#: 2

ATTN: Jeff Christian

Test Start: 2015.10.15 @ 00:37:00

Tool Information

Drill Pipe:	Length: 3909.00 ft	Diameter: 3.80 inches	Volume: 54.83 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: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 55.73 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	40.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4079.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	137.00 ft			
Tool Length:	165.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: tool landed 9' low again - added up the board 2 more times and only found small mistakes - they strapped pipe coming out for dst#1 and was only .25' off so I'm not sure where its off

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4056.00	
Hydraulic tool	5.00			4061.00	
Jars	5.00			4066.00	
Safety Joint	3.00			4069.00	
Packer	5.00			4074.00	28.00 Bottom Of Top Packer
Packer	5.00			4079.00	
Stubb	1.00			4080.00	
Recorder	0.00	8791	Inside	4080.00	
Recorder	0.00	8366	Outside	4080.00	
Perforations	37.00			4117.00	
Blank Spacing	96.00			4213.00	
Bullnose	3.00			4216.00	137.00 Bottom Packers & Anchor

Total Tool Length: 165.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

17-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Ken #2-17

Job Ticket: 65229

DST#: 2

ATTN: Jeff Christian

Test Start: 2015.10.15 @ 00:37:00

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: 52.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
100.00	Mud 100%	0.492
0.00	trace of oil in bottom	0.000

Total Length: 100.00 ft Total Volume: 0.492 bbf

Num Fluid Samples: 0

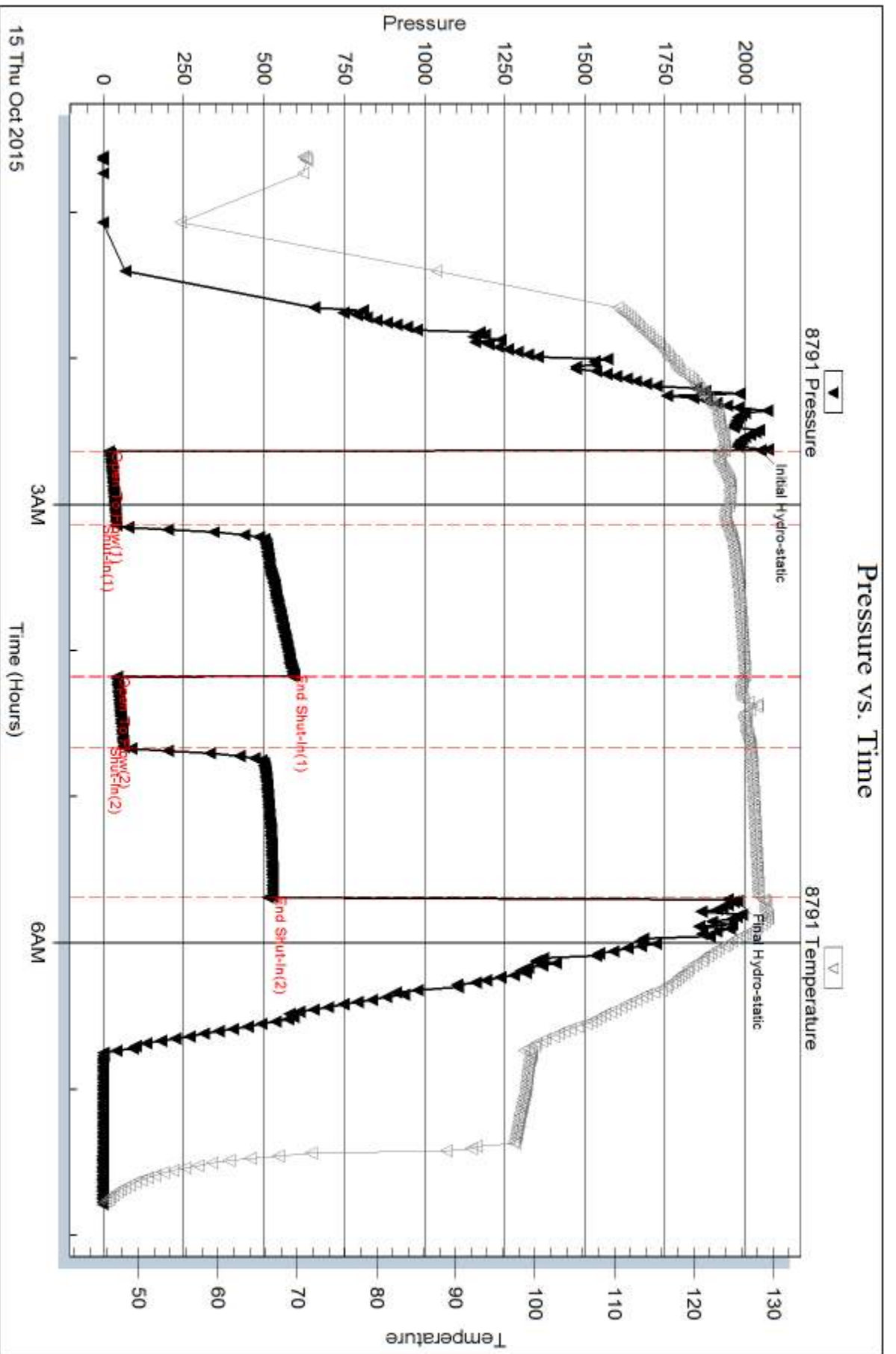
Num Gas Bombs: 0

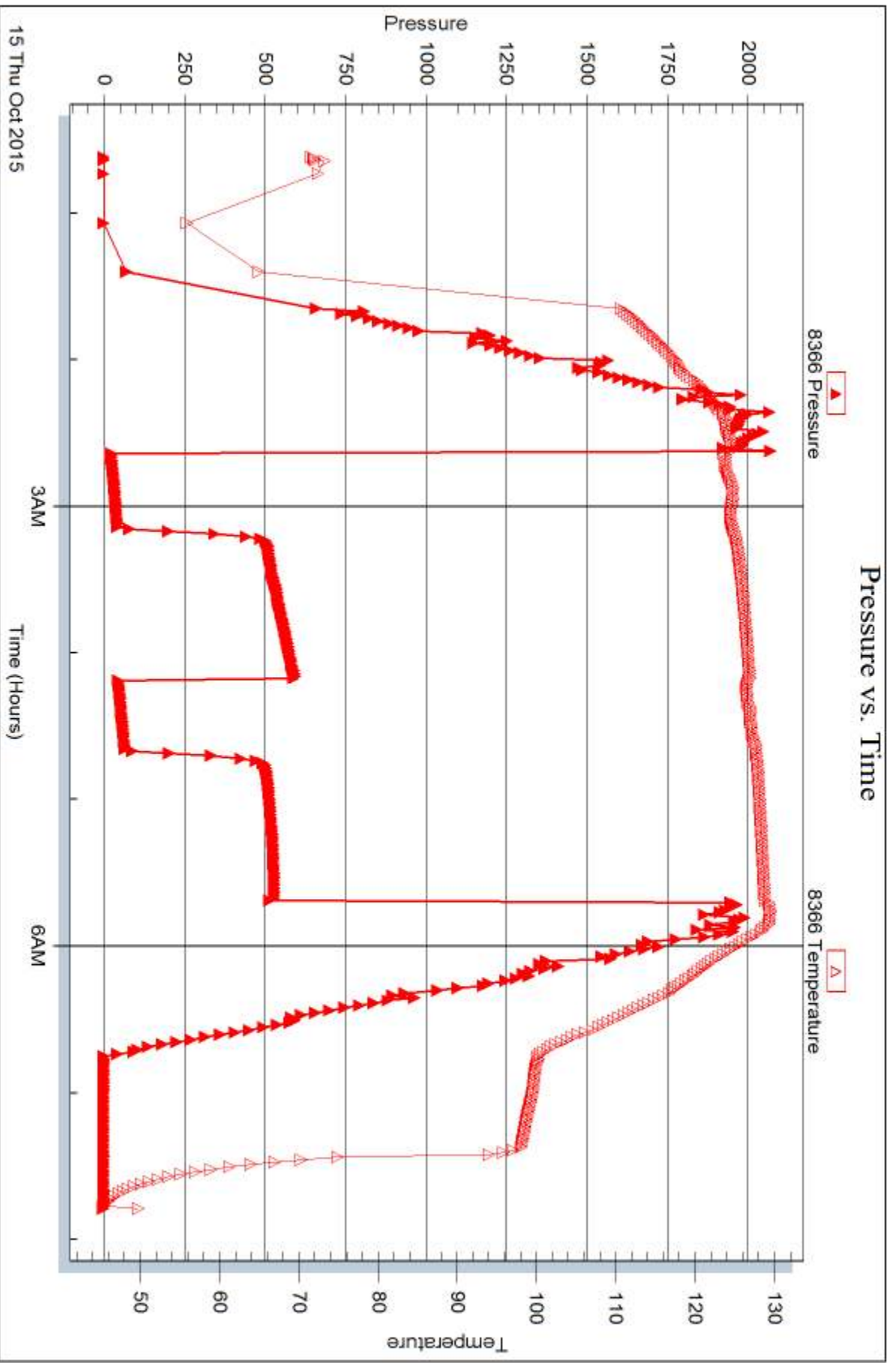
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Ken #2-17

17-1s-35w Rawlins, KS

Start Date: 2015.10.15 @ 16:06:00

End Date: 2015.10.15 @ 22:59:00

Job Ticket #: 65230 DST #: 3

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

Printed: 2015.10.16 @ 17:12:44



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

17-1s-35w Rawlins, KS

Ken #2-17

Job Ticket: 65230

DST#: 3

Test Start: 2015.10.15 @ 16:06:00

GENERAL INFORMATION:

Formation: **LKC "G"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 18:04:30
 Tester: James Winder
 Time Test Ended: 22:59:00
 Unit No: 83
Interval: 4213.00 ft (KB) To 4269.00 ft (KB) (TVD)
 Reference Elevations: 3214.00 ft (KB)
 Total Depth: 4269.00 ft (KB) (TVD)
 3203.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 11.00 ft

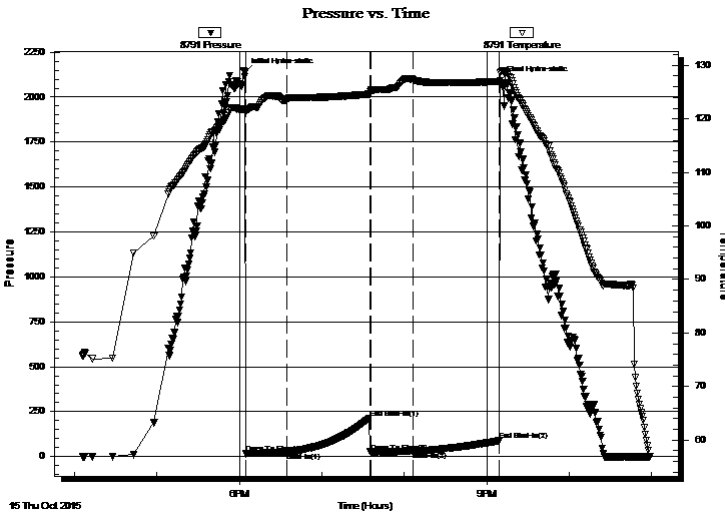
Serial #: 8791

Inside

Press@RunDepth: 28.19 psig @ 4214.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.10.15 End Date: 2015.10.15 Last Calib.: 2015.10.15
 Start Time: 16:06:05 End Time: 22:58:59 Time On Btm: 2015.10.15 @ 18:04:15
 Time Off Btm: 2015.10.15 @ 21:09:45

TEST COMMENT: 30 - IF: Blow built to 1/4", slowly died back, dead at 25 min.
 60 - IS!: No blow
 30 - FF: No blow
 60 - FS!: No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2138.69	121.95	Initial Hydro-static
1	16.25	121.47	Open To Flow (1)
31	22.18	123.60	Shut-In(1)
91	214.53	124.63	End Shut-In(1)
92	25.76	125.05	Open To Flow (2)
122	28.19	127.29	Shut-In(2)
185	88.61	127.02	End Shut-In(2)
186	2092.64	128.65	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 87% m, 13% o	0.10

* 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.

17-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Ken #2-17

Job Ticket: 65230

DST#: 3

ATTN: Jeff Christian

Test Start: 2015.10.15 @ 16:06:00

Tool Information

Drill Pipe:	Length: 4035.00 ft	Diameter: 3.80 inches	Volume: 56.60 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: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 66000.00 lb
			<u>Total Volume: 57.50 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4213.00 ft			Final 60000.00 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 landed 9' low

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

Shut In Tool	5.00			4190.00	
Hydraulic tool	5.00			4195.00	
Jars	5.00			4200.00	
Safety Joint	3.00			4203.00	
Packer	5.00			4208.00	28.00 Bottom Of Top Packer
Packer	5.00			4213.00	
Stubb	1.00			4214.00	
Recorder	0.00	8791	Inside	4214.00	
Recorder	0.00	8366	Outside	4214.00	
Perforations	18.00			4232.00	
Blank Spacing	34.00			4266.00	
Bullnose	3.00			4269.00	56.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

17-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Ken #2-17

Job Ticket: 65230

DST#: 3

ATTN: Jeff Christian

Test Start: 2015.10.15 @ 16:06:00

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM 87% _m , 13% _o	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

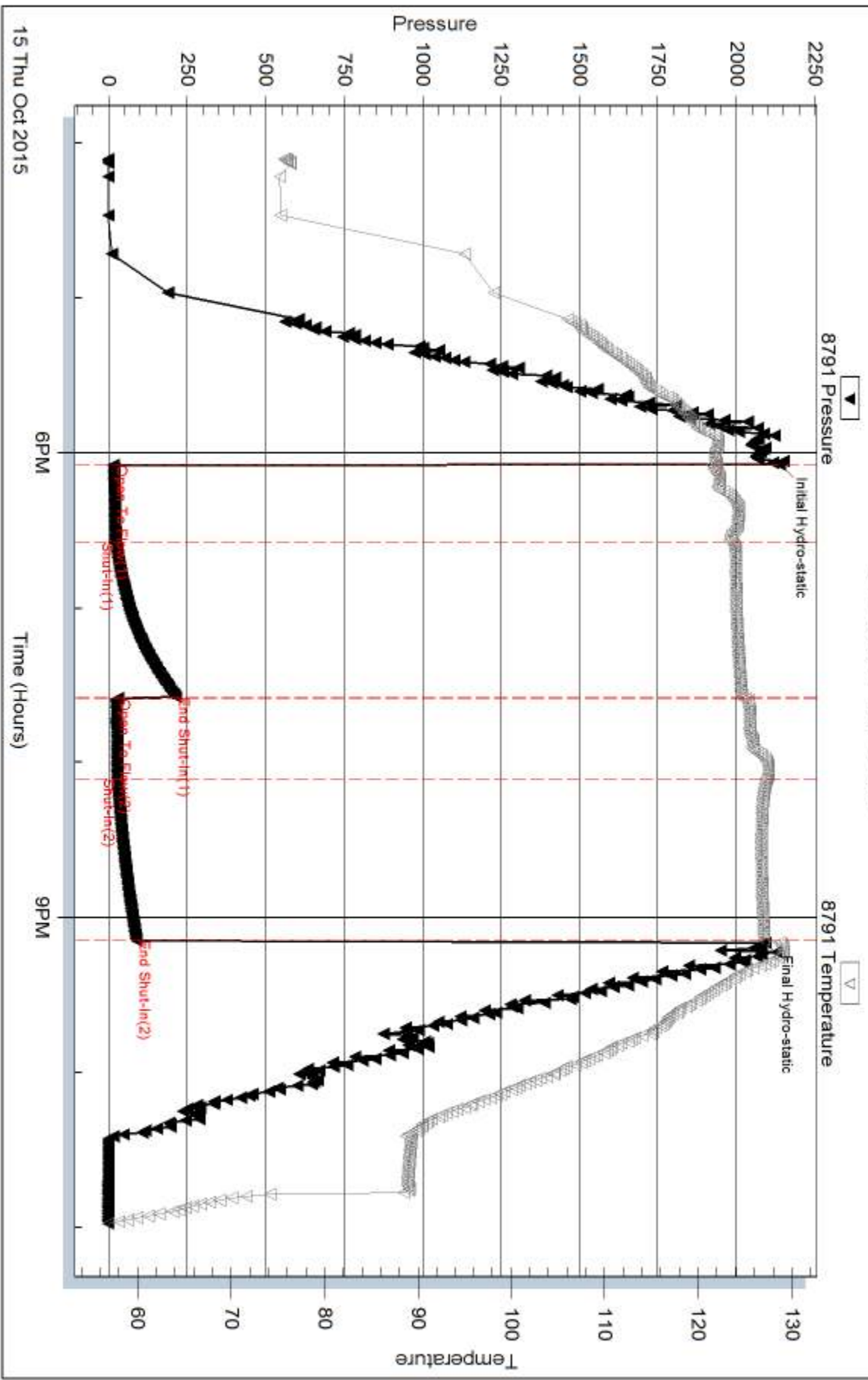
Serial #:

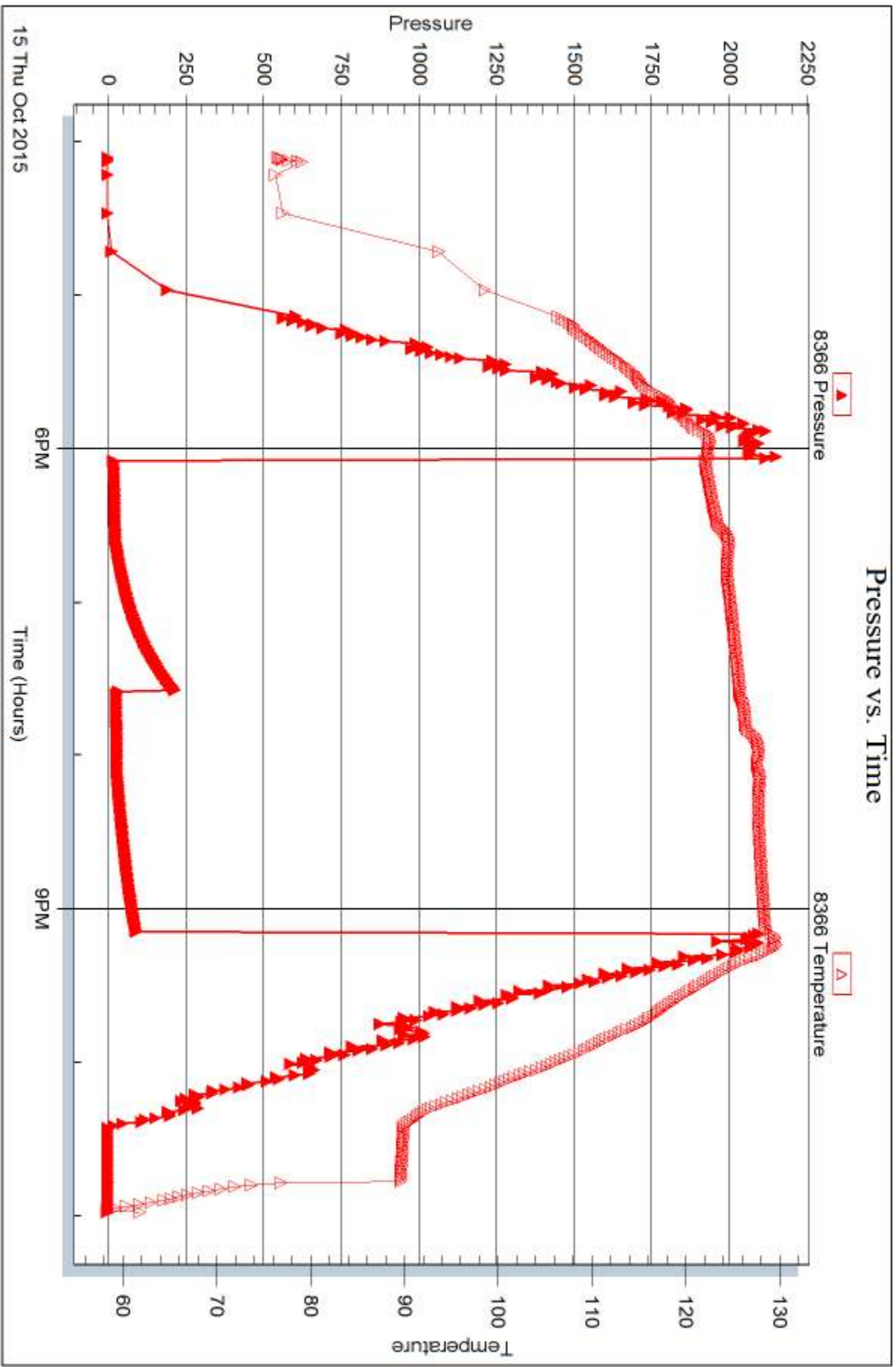
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Ken #2-17

17-1s-35w Rawlins, KS

Start Date: 2015.10.16 @ 08:52:00

End Date: 2015.10.16 @ 16:22:30

Job Ticket #: 65231 DST #: 4

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

Printed: 2015.10.16 @ 17:12:21



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

17-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Ken #2-17

Job Ticket: 65231

DST#: 4

ATTN: Jeff Christian

Test Start: 2015.10.16 @ 08:52:00

GENERAL INFORMATION:

Formation: **LKC "H - J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:40:00

Time Test Ended: 16:22:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4268.00 ft (KB) To 4363.00 ft (KB) (TVD)

Total Depth: 4363.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3214.00 ft (KB)

3203.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8791

Inside

Press@RunDepth: 35.98 psig @ 4269.00 ft (KB)

Start Date: 2015.10.16

End Date:

2015.10.16

Start Time: 08:52:05

End Time:

16:22:29

Capacity: 8000.00 psig

Last Calib.: 2015.10.16

Time On Btm: 2015.10.16 @ 10:39:45

Time Off Btm: 2015.10.16 @ 13:47:30

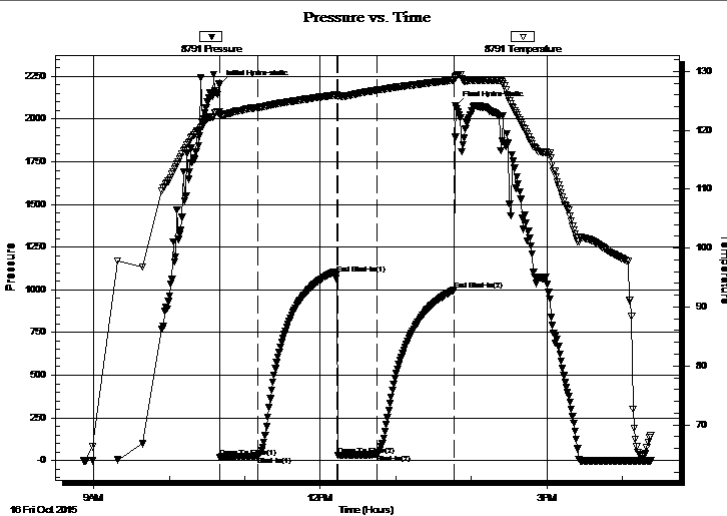
TEST COMMENT: 30 - IF: Blow built slowly to 1 1/2"

60 - IS: No blow back

30 - FF: No blow

60 - FS: No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2200.54	123.20	Initial Hydro-static
1	18.56	122.62	Open To Flow (1)
31	27.41	123.86	Shut-In(1)
94	1093.78	126.03	End Shut-In(1)
95	31.36	125.73	Open To Flow (2)
126	35.98	126.84	Shut-In(2)
187	1000.18	128.51	End Shut-In(2)
188	2081.18	129.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	OCM 82% m, 17% o, 1% g	0.22
0.00	15' Slight odor GIP	0.00

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.

17-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Ken #2-17

Job Ticket: 65231

DST#: 4

ATTN: Jeff Christian

Test Start: 2015.10.16 @ 08:52:00

Tool Information

Drill Pipe:	Length: 4088.00 ft	Diameter: 3.80 inches	Volume: 57.34 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: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 58.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4268.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	95.00 ft			
Tool Length:	123.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: tool still landing about 9' low

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

Shut In Tool	5.00			4245.00	
Hydraulic tool	5.00			4250.00	
Jars	5.00			4255.00	
Safety Joint	3.00			4258.00	
Packer	5.00			4263.00	28.00 Bottom Of Top Packer
Packer	5.00			4268.00	
Stubb	1.00			4269.00	
Recorder	0.00	8791	Inside	4269.00	
Recorder	0.00	8366	Outside	4269.00	
Perforations	26.00			4295.00	
Blank Spacing	65.00			4360.00	
Bullnose	3.00			4363.00	95.00 Bottom Packers & Anchor

Total Tool Length: 123.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

17-1s-35w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Ken #2-17

Job Ticket: 65231

DST#: 4

ATTN: Jeff Christian

Test Start: 2015.10.16 @ 08:52:00

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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.00 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	OCM 82% _m , 17% _o , 1% _g	0.221
0.00	15' Slight odor GIP	0.000

Total Length: 45.00 ft Total Volume: 0.221 bbl

Num Fluid Samples: 0

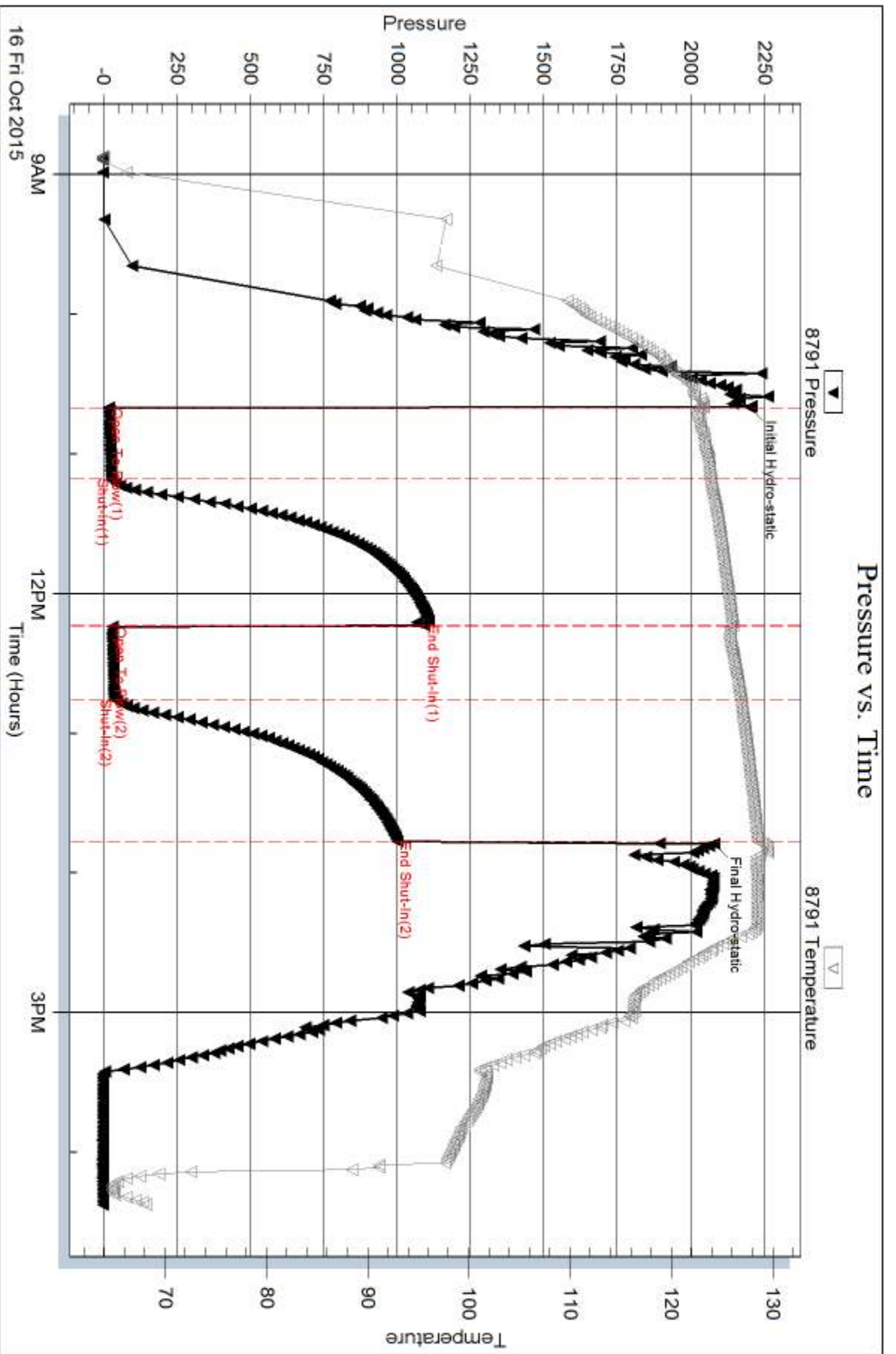
Num Gas Bombs: 0

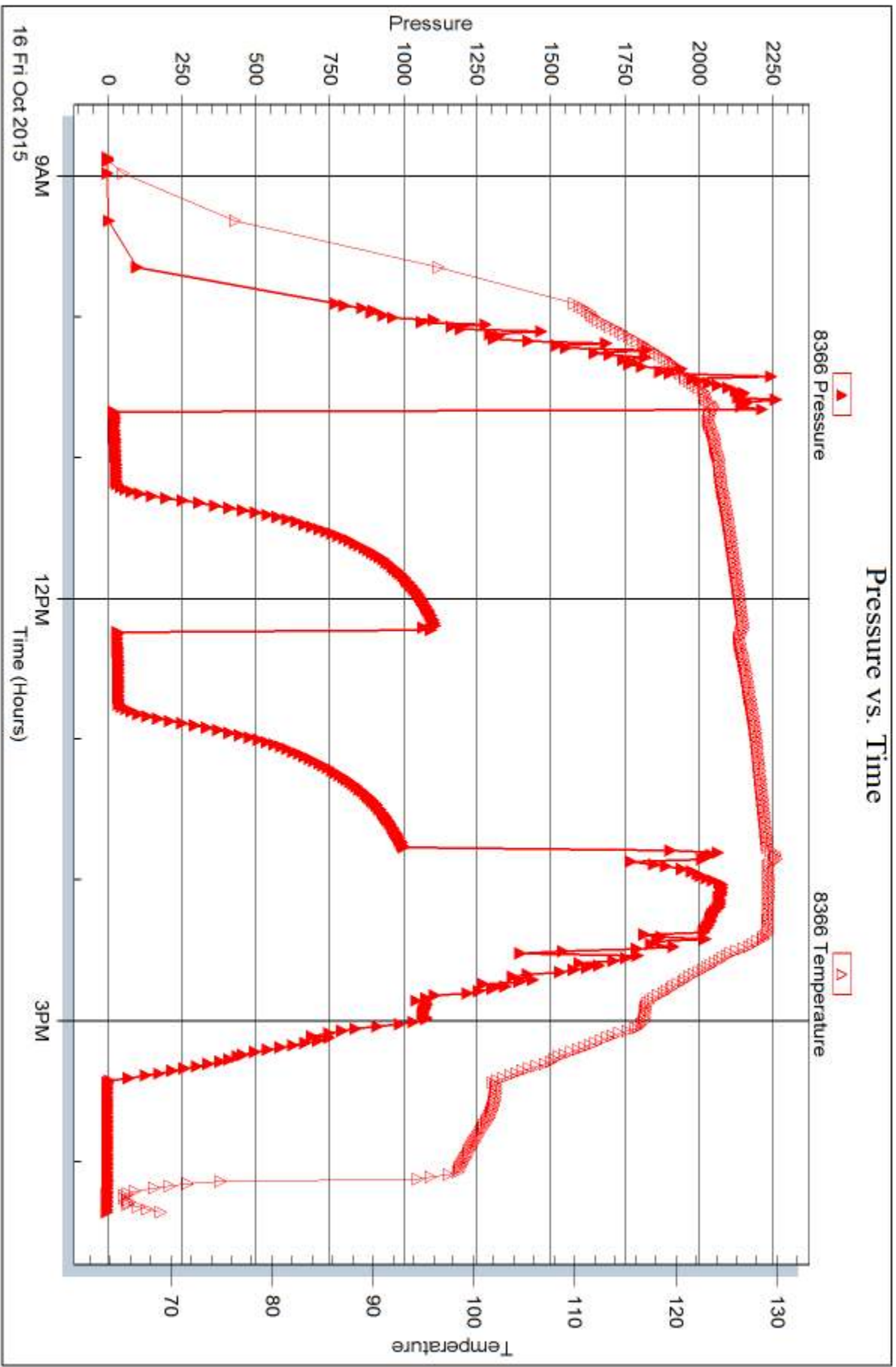
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65228**

Well Name & No. Ken #2-17 Test No. 1 Date 10-13-15
 Company Murfin Drilling Co. Inc Elevation 3214 KB 3203 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin #2
 Location: Sec. 17 Twp. 1S Rge. 35W Co. Rawlins State KS

Interval Tested 3677-3725 Zone Tested Foraker
 Anchor Length 48 Drill Pipe Run 3496 Mud Wt. 8.9
 Top Packer Depth 3672 Drill Collars Run 182 Vis 54
 Bottom Packer Depth 3677 Wt. Pipe Run - WL 6.4
 Total Depth 3725 Chlorides 700 ppm System LCM 6

Blow Description IF: 2 1/2" surge blow at open, built slightly, slowly died back to 1 3/4"
ISI: No blowback
FF: No blow
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>Mud</u>			<u>100%</u>	
	<u>Oil spots in tool</u>				

Rec Total 60 BHT 121 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1801</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>6:45</u>
(B) First Initial Flow <u>40</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>8:05</u>
(C) First Final Flow <u>42</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>10:06</u>
(D) Initial Shut-In <u>985</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>13:10</u>
(E) Second Initial Flow <u>40</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>14:45</u>
(F) Second Final Flow <u>43</u>	<input checked="" type="checkbox"/> Mileage <u>104RT</u>	Comments <u>tool chased 4-5" at</u>
(G) Final Shut-In <u>903</u>	<input type="checkbox"/> Sampler _____	<u>open - lost 2-3' of mud - 2 1/2"</u>
(H) Final Hydrostatic <u>1760</u>	<input type="checkbox"/> Straddle _____	<u>surge blow at open</u>
	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility _____	Total <u>1479</u>
	Sub Total <u>1479</u>	MP/DST Disc't _____

Approved By [Signature] Our Representative James Windu
 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. **65229**

Well Name & No. Ken # 2-17 Test No. 2 Date 10-15-15
 Company Murfin Drilling Co. Inc Elevation 3214 KB 3203 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin #2
 Location: Sec. 17 Twp. 1S Rge. 35W Co. Rawlins State KS

Interval Tested 4079-4216 Zone Tested LKC "A-D"
 Anchor Length 137 Drill Pipe Run 3909 Mud Wt. 9.2
 Top Packer Depth 4074 Drill Collars Run 182 Vis 52
 Bottom Packer Depth 4079 Wt. Pipe Run - WL 6.8
 Total Depth 4216 Chlorides 700 ppm System LCM 6

Blow Description IF: Blow built to 1 3/4"
ISI: No blowback
FF: No blow
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>100</u>	<u>Mud</u>			<u>100</u>	
	<u>Trace of oil in bottom</u>				

Rec Total 100 BHT 128 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2048 Test 1150 T-On Location 00:05
 (B) First Initial Flow 18 Jars 250 T-Started 00:37
 (C) First Final Flow 40 Safety Joint 75 T-Open 2:38
 (D) Initial Shut-In 593 Circ Sub _____ T-Pulled 5:41
 (E) Second Initial Flow 42 Hourly Standby _____ T-Out 7:45
 (F) Second Final Flow 63 Mileage 104RT Comments _____
 (G) Final Shut-In 528 Sampler _____
 (H) Final Hydrostatic 1976 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1579

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1579
 MP/DST Disc't _____

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

Approved By Jeff Christian Our Representative James Windes

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 of 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. **65230**

Well Name & No. Ken #2-17 Test No. 3 Date 10-15-15
 Company Murfin Drilling Co. Inc Elevation 3214 KB 3203 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin #2
 Location: Sec. 17 Twp. 1S Rge. 35W Co. Rawlins State KS

Interval Tested 4213 - 4269 Zone Tested LKC "G"
 Anchor Length 56 Drill Pipe Run 4035 Mud Wt. 9.1
 Top Packer Depth 4208 Drill Collars Run 182 Vis 57
 Bottom Packer Depth 4213 Wt. Pipe Run - WL 5.6
 Total Depth 4269 Chlorides 700 ppm System LCM 8
 Blow Description IF: Blow built to 1/4", slowly died back, dead at 25 min.
ISI: No blow
FF: No blow
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>OCM</u>	<u>13</u>		<u>87</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 20 BHT 127 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2139 Test 1150 T-On Location 15:45
 (B) First Initial Flow 16 Jars 250 T-Started 16:06
 (C) First Final Flow 22 Safety Joint 75 T-Open 18:04
 (D) Initial Shut-In 215 Circ Sub _____ T-Pulled 21:09
 (E) Second Initial Flow 26 Hourly Standby _____ T-Out 22:55
 (F) Second Final Flow 28 Mileage 104RT Comments _____
 (G) Final Shut-In 89 Sampler _____
 (H) Final Hydrostatic 2093 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1579

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

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1579
 MP/DST Disc't _____

Approved By Jeff Christian 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. **65231**

Well Name & No. Ken #2-17 Test No. 4 Date 10-16-15
 Company Murfin Drilling Co. Inc. Elevation 3214 KB 3203 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin #2
 Location: Sec. 17 Twp. 1s Rge. 35w Co. Rawlins State KS

Interval Tested 4268-4363 Zone Tested LKC "H-J"
 Anchor Length 95 Drill Pipe Run 4088 Mud Wt. 9.4
 Top Packer Depth 4263 Drill Collars Run 182 Vis 54
 Bottom Packer Depth 4268 Wt. Pipe Run - WL 6.0
 Total Depth 4363 Chlorides 900 ppm System LCM 7

Blow Description IF: Blow built slowly to 1 1/2"
ISI: No blowback
FF: No blow
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>0cm</u>	<u>1</u>	<u>17</u>	<u>-</u>	<u>82</u>
Rec	Feet of	%gas	%oil	%water	%mud
	<u>15' light odor GIP</u>				
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 45 BHT 129 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2201 Test 1150 T-On Location 8:20
 (B) First Initial Flow 19 Jars 250 T-Started 8:52
 (C) First Final Flow 27 Safety Joint 75 T-Open 10:40
 (D) Initial Shut-In 1094 Circ Sub _____ T-Pulled 13:46
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 16:20
 (F) Second Final Flow 36 Mileage 104 RT Comments _____
 (G) Final Shut-In 1000 Sampler _____
 (H) Final Hydrostatic 2081 Straddle _____

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1579
 MP/DST Disc't _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1579

Approved By Jeff Christian 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.