



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Kruto #3-29

29-10s-34w Thomas KS

Start Date: 2014.11.12 @ 11:36:20

End Date: 2014.11.12 @ 20:38:15

Job Ticket #: 59659 DST #: 1

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

Printed: 2014.11.17 @ 10:36:48



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59659

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.11.12 @ 11:36:20

GENERAL INFORMATION:

Formation: **Lansing K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:47:15

Time Test Ended: 20:38:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 60

Interval: 4353.00 ft (KB) To 4380.00 ft (KB) (TVD)

Reference Elevations: 3219.00 ft (KB)

Total Depth: 4380.00 ft (KB) (TVD)

3208.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8373

Inside

Press@RunDepth: 212.79 psig @ 4354.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.12

End Date:

2014.11.12

Last Calib.:

2014.11.12

Start Time: 11:36:20

End Time:

20:38:15

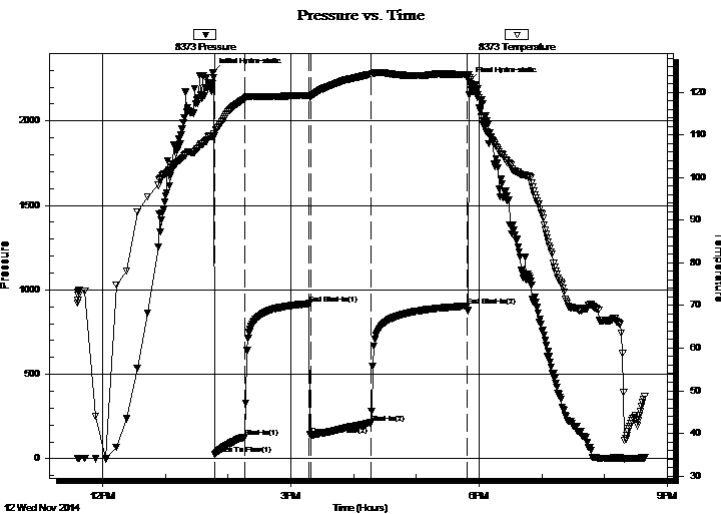
Time On Btm:

2014.11.12 @ 13:45:45

Time Off Btm:

2014.11.12 @ 17:50:44

TEST COMMENT: IF: 1/4 blow BOB in 22 min.
IS: Surface blow built to 1 in 60 min.
FF: 1/4 blow BOB in 25 min.
FS: Surface blow built to 3 in 90 mins.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2287.70	109.84	Initial Hydro-static
2	28.25	109.84	Open To Flow (1)
31	127.66	118.49	Shut-In(1)
92	918.32	119.24	End Shut-In(1)
93	138.51	118.86	Open To Flow (2)
151	212.79	124.20	Shut-In(2)
243	904.77	124.13	End Shut-In(2)
245	2234.21	123.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcw 90%w 10%m	0.91
124.00	mcw 60%w 40%m	1.31
155.00	go 20%g 80%o	2.17
0.00	341 GIP	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

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59659

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.11.12 @ 11:36:20

Tool Information

Drill Pipe:	Length: 4100.00 ft	Diameter: 3.80 inches	Volume: 57.51 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:	25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 58.66 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	4353.00 ft			Final	68000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	27.00 ft				
Tool Length:	55.00 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			4326.00	
Shut In Tool	5.00			4331.00	
Hydraulic tool	5.00			4336.00	
Jars	5.00			4341.00	
Safety Joint	3.00			4344.00	
Packer	5.00			4349.00	28.00 Bottom Of Top Packer
Packer	4.00			4353.00	
Stubb	1.00			4354.00	
Recorder	0.00	8373	Inside	4354.00	
Recorder	0.00	8166	Outside	4354.00	
Perforations	21.00			4375.00	
Bullnose	5.00			4380.00	27.00 Bottom Packers & Anchor

Total Tool Length: 55.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59659

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.11.12 @ 11:36:20

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

50000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
186.00	mcw 90%w 10%m	0.915
124.00	mcw 60%w 40%m	1.311
155.00	go 20%g 80%o	2.174
0.00	341 GIP	0.000

Total Length: 465.00 ft

Total Volume: 4.400 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 31@30=34

.32@33=50000

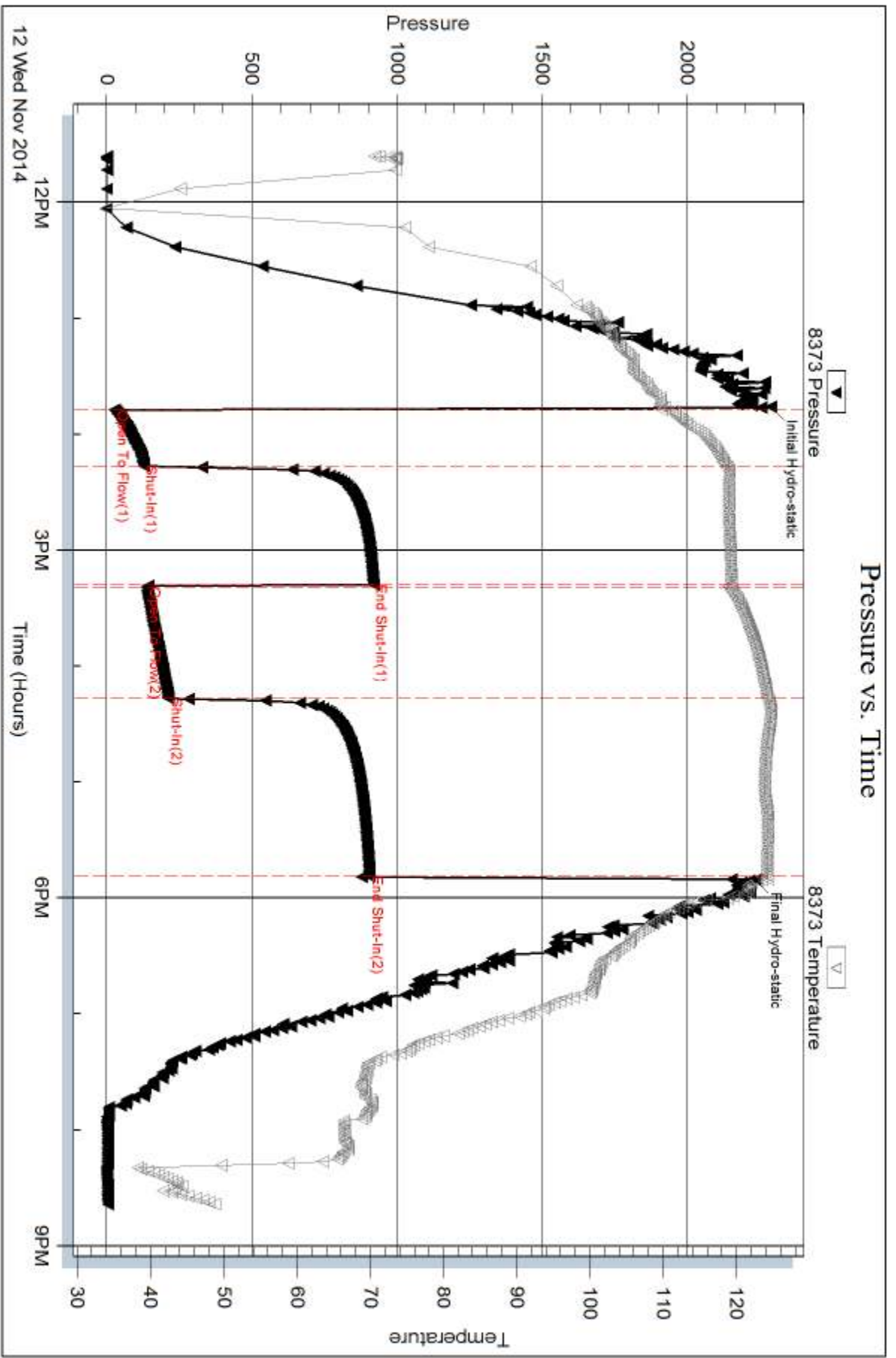
Serial #: 8373

Inside

Murfin Drilling Co Inc

Krulo #3-29

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 59659

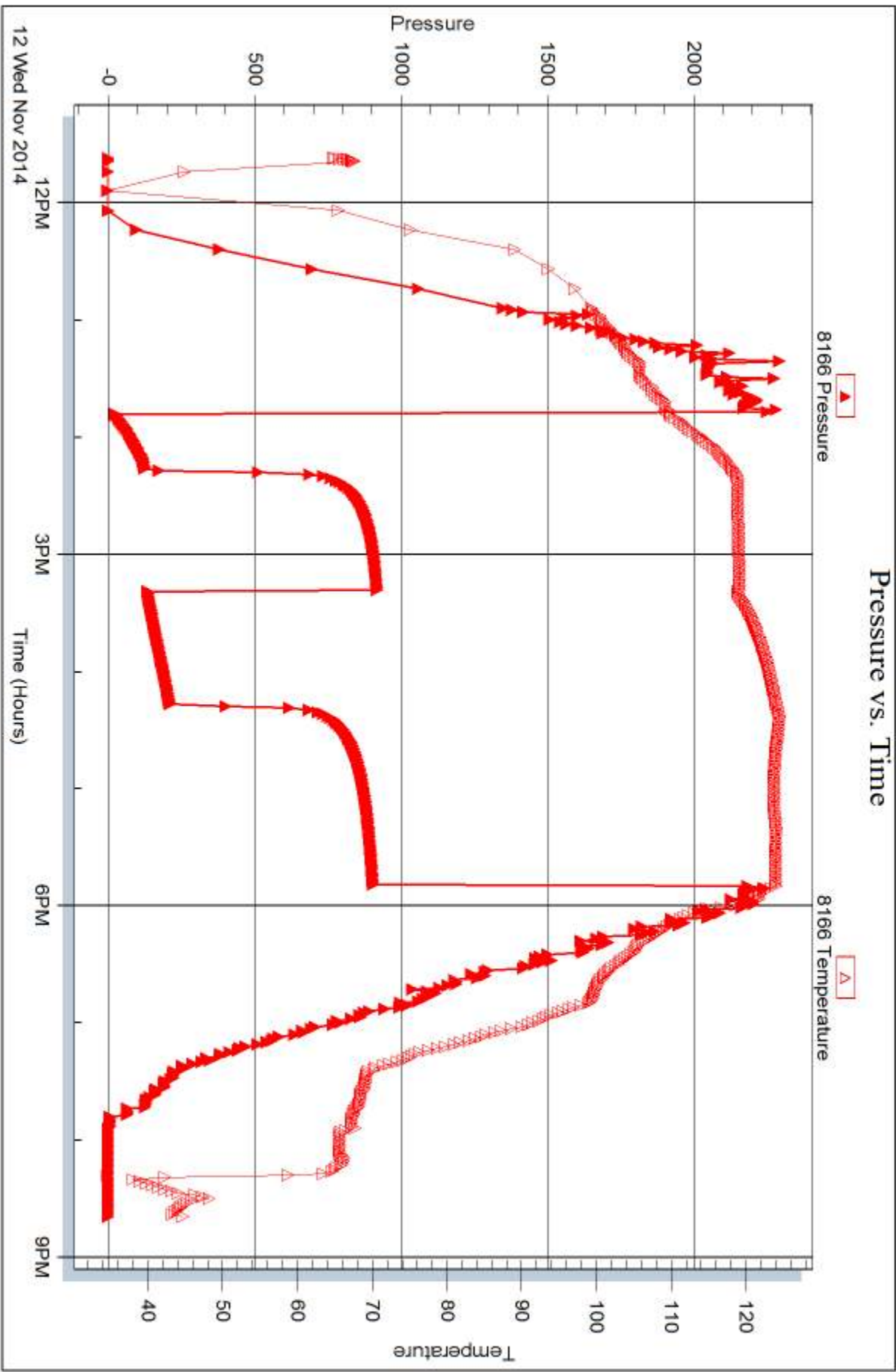
Printed: 2014.11.17 @ 10:36:49

Serial #: 8166

Outside Murfin Drilling Co Inc

Krulo #3-29

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 59659

Printed: 2014.11.17 @ 10:36:49



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Kruto #3-29

29-10s-34w Thomas KS

Start Date: 2014.11.13 @ 17:04:58

End Date: 2014.11.13 @ 22:50:28

Job Ticket #: 59660 DST #: 2

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

Printed: 2014.11.17 @ 10:36:25



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59660

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.11.13 @ 17:04:58

GENERAL INFORMATION:

Formation: **Lower Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:51:58

Time Test Ended: 22:50:28

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4577.00 ft (KB) To 4603.00 ft (KB) (TVD)

Reference Elevations: 3219.00 ft (KB)

Total Depth: 4603.00 ft (KB) (TVD)

3208.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8373 Inside

Press@RunDepth: 128.21 psig @ 4578.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.13

End Date: 2014.11.13

Last Calib.: 2014.11.13

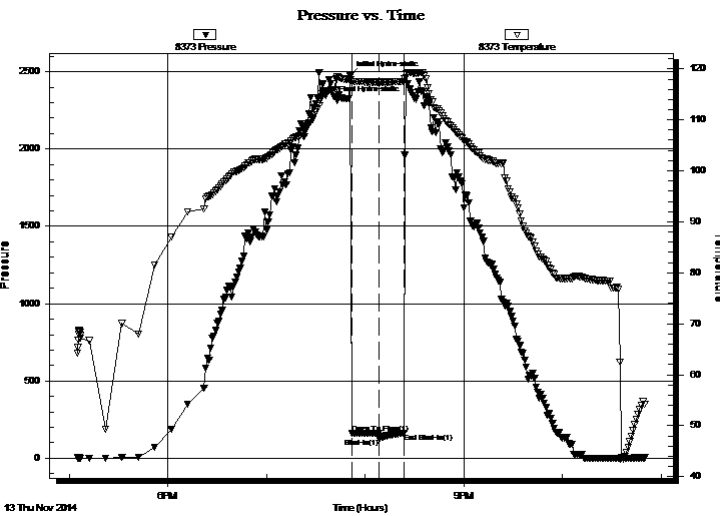
Start Time: 17:05:03

End Time: 22:50:27

Time On Btm: 2014.11.13 @ 19:50:58

Time Off Btm: 2014.11.13 @ 20:24:58

TEST COMMENT: IF: No blow.
IS: No return.
Slid tool the first time we opened it and took on a bunch of mud.
draw work motor didnt have the power to pick it up off bottom.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2473.53	117.83	Initial Hydro-static
1	161.90	117.50	Open To Flow (1)
18	128.21	117.38	Shut-In(1)
33	163.30	117.54	End Shut-In(1)
34	2464.27	119.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
293.00	mud 100%m	1.99

* 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

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59660

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.11.13 @ 17:04:58

Tool Information

Drill Pipe:	Length: 4346.00 ft	Diameter: 3.80 inches	Volume: 60.96 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: 25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 62.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4577.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	54.00 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			4550.00	
Shut In Tool	5.00			4555.00	
Hydraulic tool	5.00			4560.00	
Jars	5.00			4565.00	
Safety Joint	3.00			4568.00	
Packer	5.00			4573.00	28.00 Bottom Of Top Packer
Packer	4.00			4577.00	
Stubb	1.00			4578.00	
Recorder	0.00	8373	Inside	4578.00	
Recorder	0.00	8166	Outside	4578.00	
Perforations	20.00			4598.00	
Bullnose	5.00			4603.00	26.00 Bottom Packers & Anchor

Total Tool Length: 54.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59660

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.11.13 @ 17:04:58

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
293.00	mud 100%m	1.987

Total Length: 293.00 ft Total Volume: 1.987 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

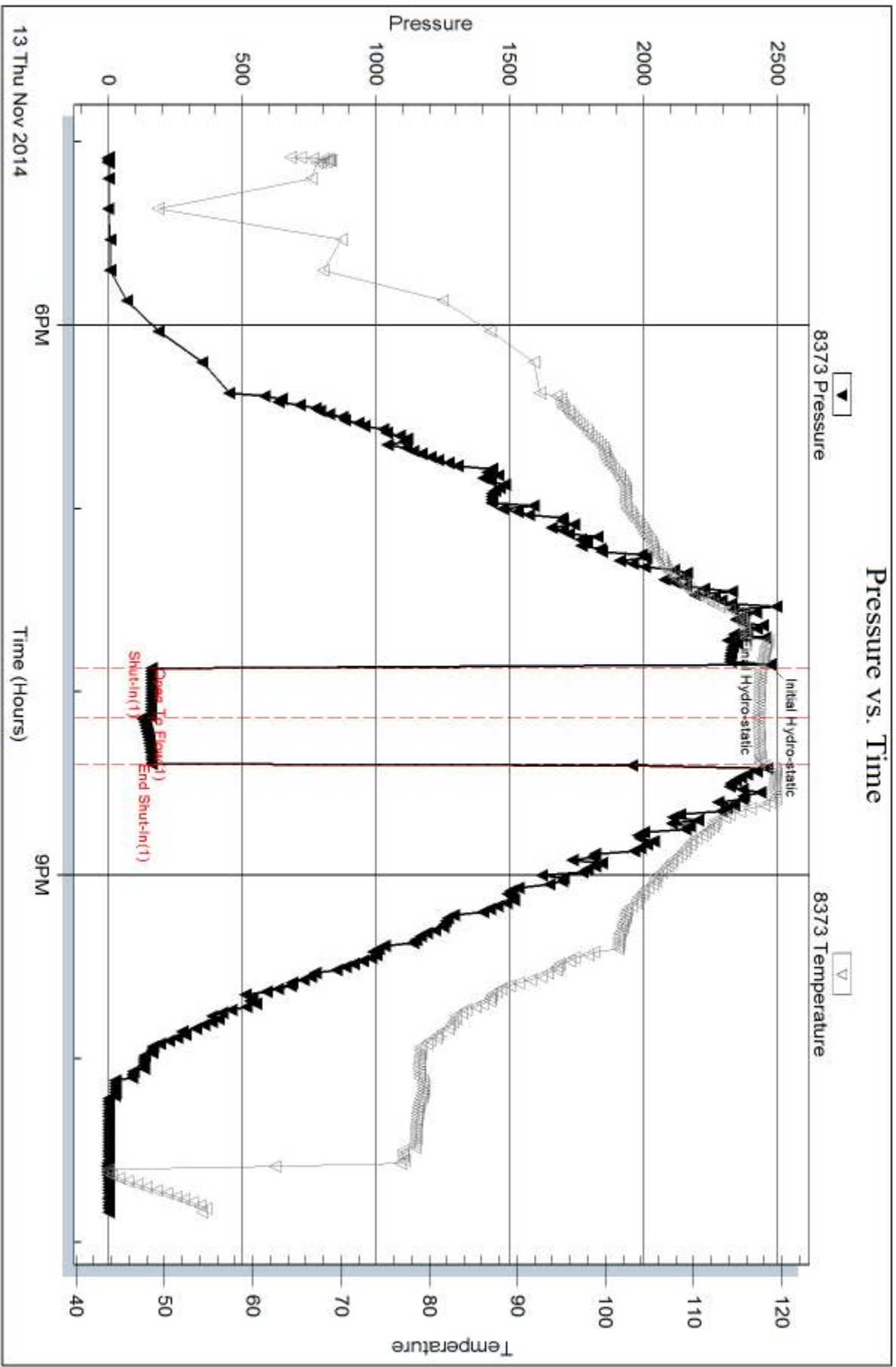
Serial #: 8373

Inside

Murfin Drilling Co Inc

Kruto #3-29

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Kruto #3-29

29-10s-34w Thomas KS

Start Date: 2014.11.14 @ 05:26:09

End Date: 2014.11.14 @ 12:55:09

Job Ticket #: 59661 DST #: 3

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

Printed: 2014.11.17 @ 10:36:01



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59661

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.11.14 @ 05:26:09

GENERAL INFORMATION:

Formation: **Low Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:51:39

Time Test Ended: 12:55:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4569.00 ft (KB) To 4603.00 ft (KB) (TVD)

Reference Elevations: 3219.00 ft (KB)

Total Depth: 4603.00 ft (KB) (TVD)

3208.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8373

Inside

Press@RunDepth: 21.10 psig @ 4570.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.14

End Date:

2014.11.14

Last Calib.:

2014.11.14

Start Time: 05:26:14

End Time:

12:55:08

Time On Btm:

2014.11.14 @ 07:50:09

Time Off Btm:

2014.11.14 @ 10:53:09

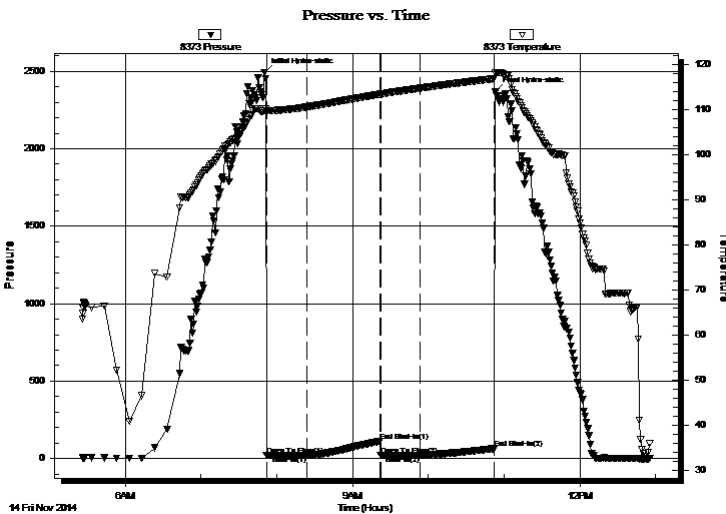
TEST COMMENT: IF: 1/4" blow died in 8 mins.

IS: No return.

FF: No blow.

FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2492.68	109.79	Initial Hydro-static
2	20.68	109.29	Open To Flow (1)
34	20.21	110.56	Shut-In(1)
92	112.83	113.38	End Shut-In(1)
92	20.72	113.35	Open To Flow (2)
124	21.10	114.73	Shut-In(2)
182	63.89	116.83	End Shut-In(2)
183	2366.00	118.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%m	0.02

* 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

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59661

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.11.14 @ 05:26:09

Tool Information

Drill Pipe:	Length: 4318.00 ft	Diameter: 3.80 inches	Volume: 60.57 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:	25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 61.72 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4569.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	34.00 ft				
Tool Length:	62.00 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			4542.00	
Shut In Tool	5.00			4547.00	
Hydraulic tool	5.00			4552.00	
Jars	5.00			4557.00	
Safety Joint	3.00			4560.00	
Packer	5.00			4565.00	28.00 Bottom Of Top Packer
Packer	4.00			4569.00	
Stubb	1.00			4570.00	
Recorder	0.00	8373	Inside	4570.00	
Recorder	0.00	8166	Outside	4570.00	
Perforations	28.00			4598.00	
Bullnose	5.00			4603.00	34.00 Bottom Packers & Anchor

Total Tool Length: 62.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59661

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.11.14 @ 05:26:09

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	mud 100%m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

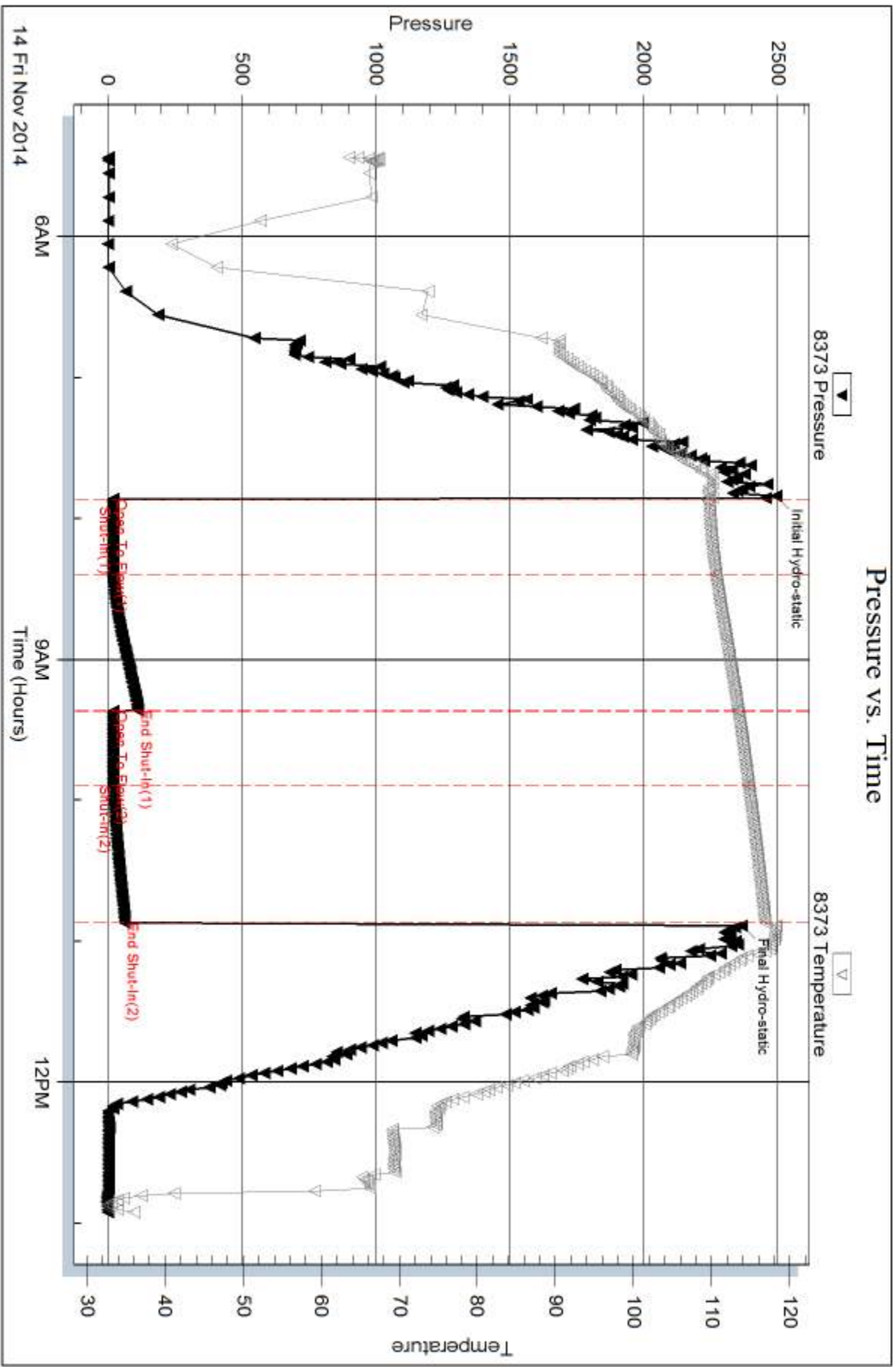
Serial #: 8373

Inside

Murfin Drilling Co Inc

Krulo #3-29

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 59661

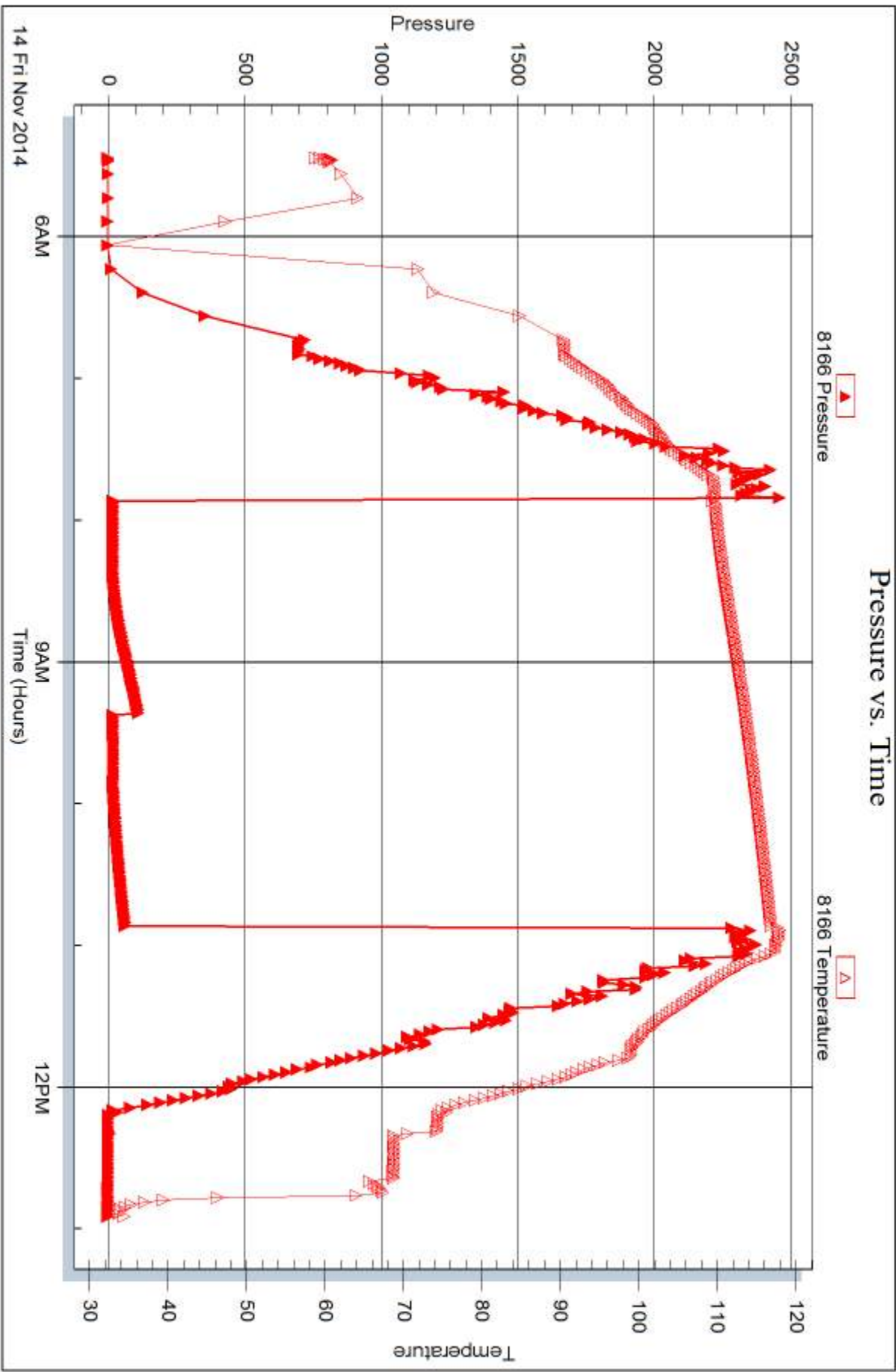
Printed: 2014.11.17 @ 10:36:03

Serial #: 8166

Outside Murfin Drilling Co Inc

Kruto #3-29

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Kruto #3-29

29-10s-34w Thomas KS

Start Date: 2014.11.15 @ 04:05:33

End Date: 2014.11.15 @ 12:34:33

Job Ticket #: 59662 DST #: 4

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

Printed: 2014.11.17 @ 10:35:22



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59662

DST#: 4

ATTN: Robert Hendrix

Test Start: 2014.11.15 @ 04:05:33

GENERAL INFORMATION:

Formation: **Johnson Zone**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:12:03

Time Test Ended: 12:34:33

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4654.00 ft (KB) To 4698.00 ft (KB) (TVD)

Reference Elevations: 3219.00 ft (KB)

Total Depth: 4698.00 ft (KB) (TVD)

3208.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8373

Inside

Press@RunDepth: 63.45 psig @ 4655.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.15

End Date:

2014.11.15

Last Calib.:

2014.11.15

Start Time: 04:05:38

End Time:

12:34:32

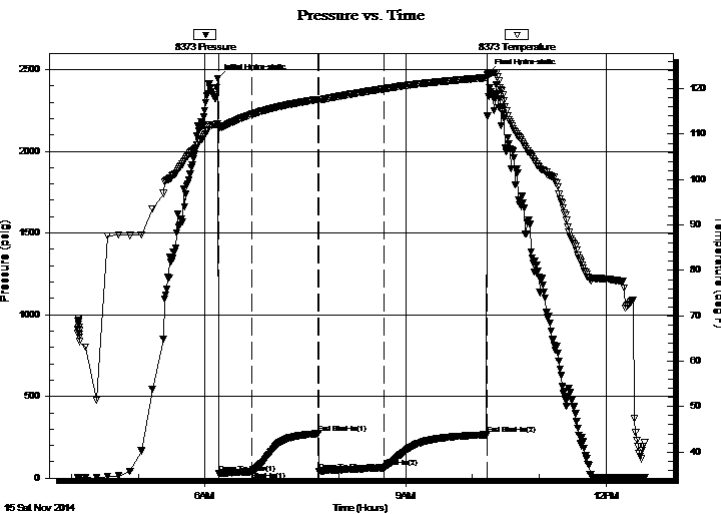
Time On Btm:

2014.11.15 @ 06:11:33

Time Off Btm:

2014.11.15 @ 10:14:03

TEST COMMENT: IF: 1/4" blow built to 3 1/2" in 30 min.
IS: No return.
FF: Surface blow built to 7" in 60 min.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2446.14	112.38	Initial Hydro-static
1	26.84	111.64	Open To Flow (1)
30	39.18	114.33	Shut-In(1)
90	272.95	117.68	End Shut-In(1)
91	41.67	117.56	Open To Flow (2)
149	63.45	120.00	Shut-In(2)
242	265.83	122.46	End Shut-In(2)
243	2477.40	123.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	ocm 30%o 70%m	0.30
60.00	oil 100%o	0.30
0.00	310 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

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59662

DST#: 4

ATTN: Robert Hendrix

Test Start: 2014.11.15 @ 04:05:33

Tool Information

Drill Pipe:	Length: 4403.00 ft	Diameter: 3.80 inches	Volume: 61.76 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:	25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 62.91 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4654.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	44.00 ft				
Tool Length:	72.00 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			4627.00	
Shut In Tool	5.00			4632.00	
Hydraulic tool	5.00			4637.00	
Jars	5.00			4642.00	
Safety Joint	3.00			4645.00	
Packer	5.00			4650.00	28.00 Bottom Of Top Packer
Packer	4.00			4654.00	
Stubb	1.00			4655.00	
Recorder	0.00	8373	Inside	4655.00	
Recorder	0.00	8166	Outside	4655.00	
Perforations	5.00			4660.00	
Change Over Sub	1.00			4661.00	
Drill Pipe	31.00			4692.00	
Change Over Sub	1.00			4693.00	
Bullnose	5.00			4698.00	44.00 Bottom Packers & Anchor

Total Tool Length: 72.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59662

DST#: 4

ATTN: Robert Hendrix

Test Start: 2014.11.15 @ 04:05:33

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

24 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 11200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	ocm 30%o 70%m	0.295
60.00	oil 100%o	0.295
0.00	310 GIP	0.000

Total Length: 120.00 ft Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 23@50=24

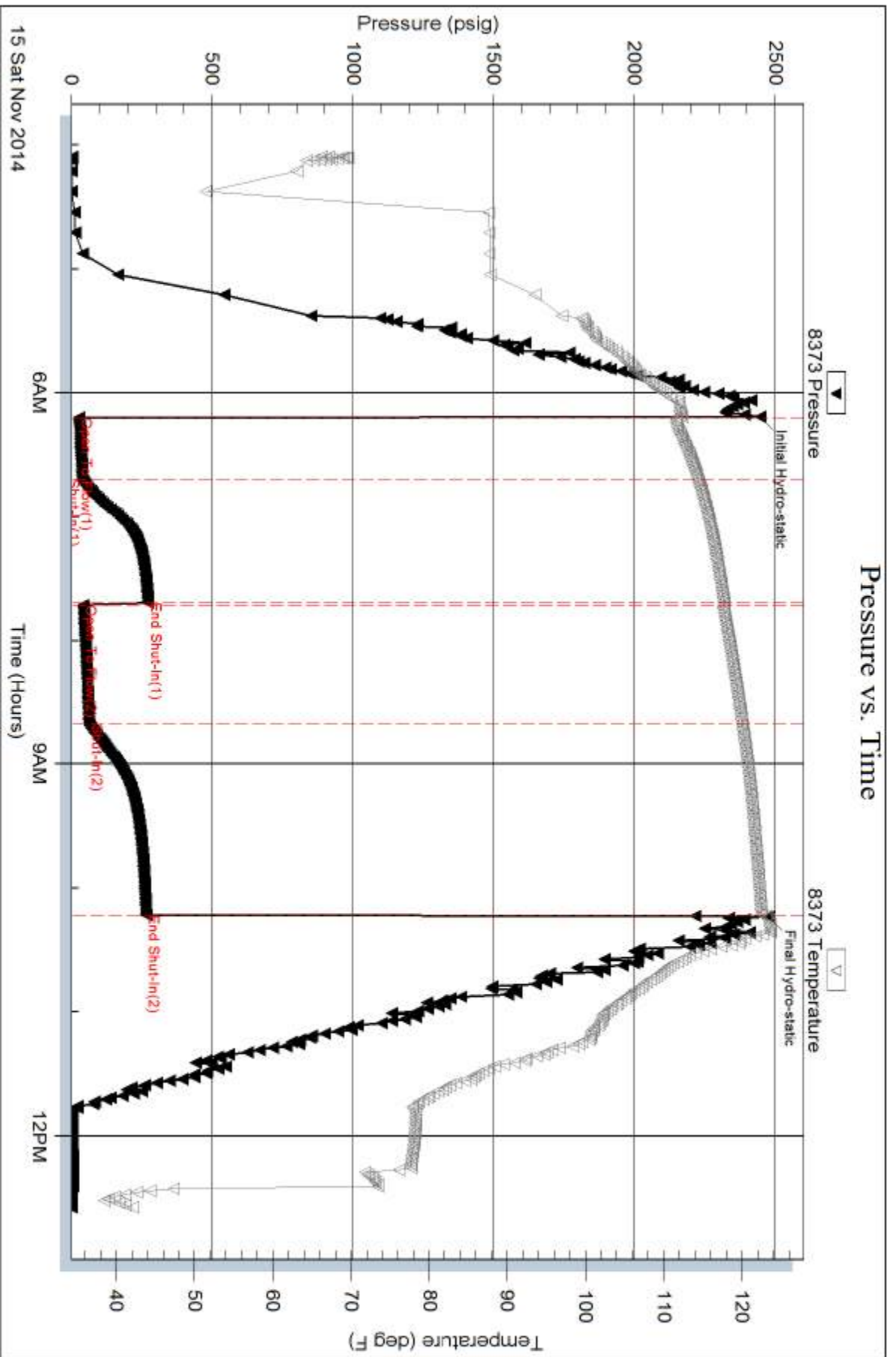
Serial #: 8373

Inside

Murfin Drilling Co Inc

Krulo #3-29

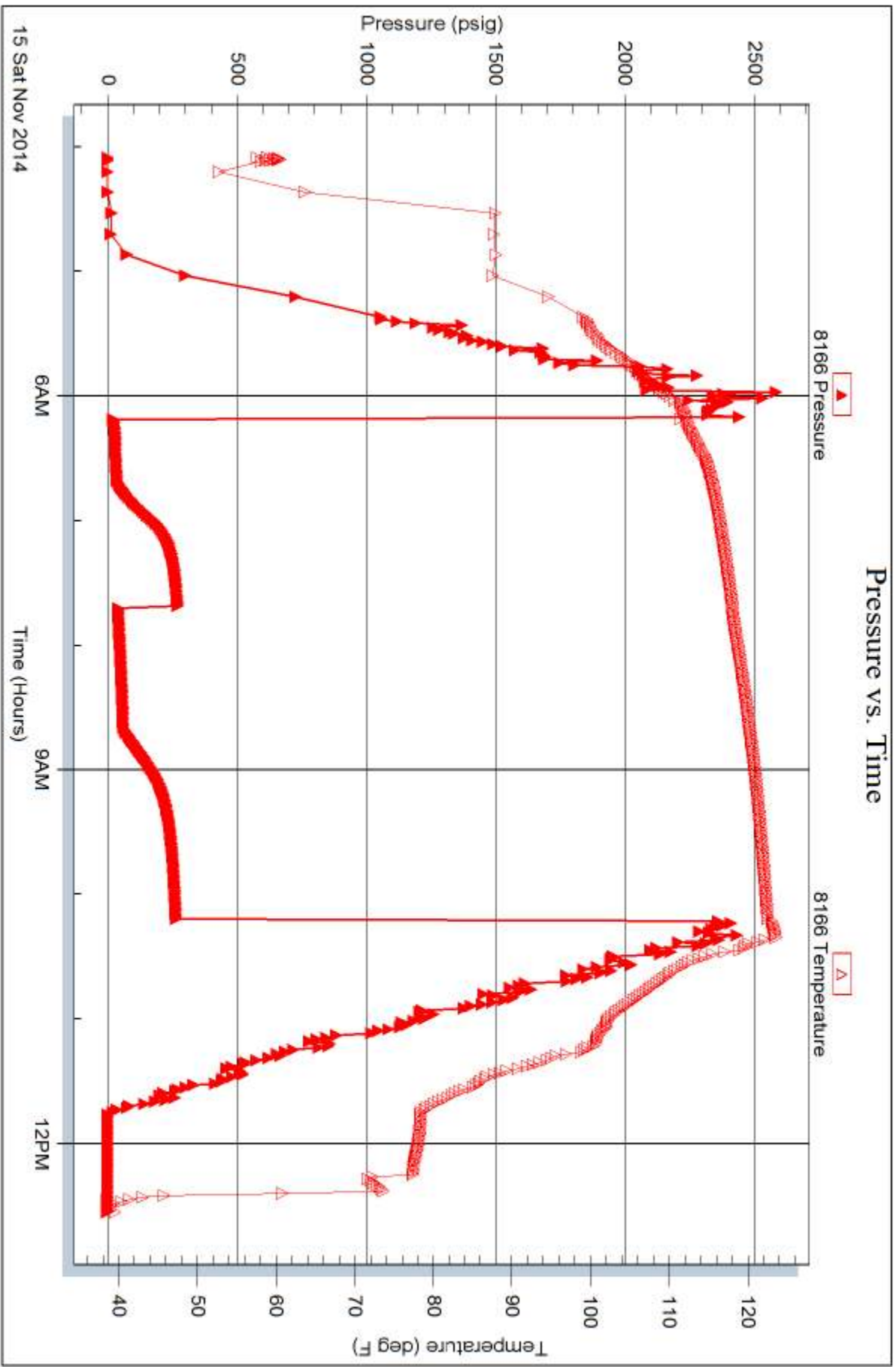
DST Test Number: 4

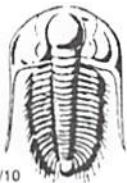


Trilobite Testing, Inc

Ref. No: 59662

Printed: 2014.11.17 @ 10:35:24





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59659

Well Name & No. Kruto 3-29 Test No. 1 Date 11-12-14
 Company Murfin Drilling Co INC Elevation 3219 KB 3208 GL
 Address 250 N Water Ste. 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin 22
 Location: Sec. 29 Twp. 10 Rge. 34 Co. Thomas State KS

Interval Tested 4353 4380 Zone Tested Lensing K
 Anchor Length 27 Drill Pipe Run 4100 Mud Wt. 9.2
 Top Packer Depth 4348 Drill Collars Run 233 Vis 56
 Bottom Packer Depth 4353 Wt. Pipe Run --- WL 6.4
 Total Depth 4380 Chlorides 9000 ppm System LCM 4

Blow Description IF: 1/4 blow BoB in 22 min.
IS: surface blow built to 1 in 60 min.
FF: 1/4 blow BoB in 25 min.
FS: surface blow built to 3 in 90 min.

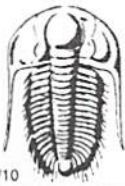
Rec	Feet of	%gas	%oil	%water	%mud
<u>155</u>	<u>90</u>	<u>20</u>	<u>80</u>		
<u>124</u>	<u>MCLW</u>			<u>60</u>	<u>40</u>
<u>186</u>	<u>MCLW</u>			<u>90</u>	<u>10</u>
	<u>341 GIP</u>				

Rec Total 465 BHT 124 Gravity 35 API RW .32 @ 33° F Chlorides 50,000 ppm
 (A) Initial Hydrostatic 2287 Test 1250 T-On Location 10:20 AM
 (B) First Initial Flow 28 Jars 250 T-Started 11:36 AM
 (C) First Final Flow 127 Safety Joint 75 T-Open 1:47 PM
 (D) Initial Shut-In 918 Circ Sub NIL T-Pulled 5:47 PM
 (E) Second Initial Flow 138 Hourly Standby _____ T-Out 8:40 PM
 (F) Second Final Flow 212 Mileage 140 - 130rt 201.50 Comments _____
 (G) Final Shut-In 904 Sampler _____
 (H) Final Hydrostatic 2234 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60 90
 Final Shut-In _____
 Sub Total 1776.50
 Total 1776.50
 MP/DST Disc't _____

Approved By RLD. Hly 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. 59660

Well Name & No. Kruto 3-29 Test No. 2 Date 11-13-14
 Company Murfin Drilling Co Elevation 3219 KB 3208 GL
 Address _____
 Co. Rep / Geo. Robert Hendrix Rig Murfin 22
 Location: Sec. 29 Twp. 10 Rge. 34 Co. Thomas State KS

Interval Tested 4577 4603 Zone Tested Lower Penns
 Anchor Length 26 Drill Pipe Run 4346 Mud Wt. 9.5
 Top Packer Depth 4572 Drill Collars Run 233 Vis 57
 Bottom Packer Depth 4577 Wt. Pipe Run _____ WL 7.6
 Total Depth 4603 Chlorides 9800 ppm System LCM 2

Blow Description IF: NO blow.
IS: NO return,

slid tool the first time we opened it and took on a bunch of mud

Rec	Feet of	%gas	%oil	%water	%mud
<u>293</u>	<u>mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 293 BHT 117 Gravity _____ API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic 2473 Test 1050 T-On Location 16:26
 (B) First Initial Flow 161 Jars 250 T-Started 17:04
 (C) First Final Flow 128 Safety Joint 75 T-Open 19:50
 (D) Initial Shut-In 163 Circ Sub N/L T-Pulled 20:20
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out 22:50
 (F) Second Final Flow _____ Mileage 140- 201.50 Comments _____
 (G) Final Shut-In _____ Sampler _____ Ruined Shale Packer _____
 (H) Final Hydrostatic 2464 Straddle _____ Ruined Packer _____

Initial Open 15 Extra Packer _____ Extra Copies _____
 Initial Shut-In 15 Extra Recorder _____ Sub Total 0
 Final Flow pull Day Standby _____ Total 1576.50
 Final Shut-In _____ Accessibility _____ MP/DST Disc't _____
 Sub Total 1576.50

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59661

Well Name & No. Kruto 3-29 Test No. 3 Date 11-14-14
 Company Murfin Drilling Co Elevation 3219 KB 3208 GL
 Address _____
 Co. Rep / Geo. Robert Hendrix Rig Murfin 22
 Location: Sec. 29 Twp. 10 Rge. 34 Co. Thomas State KS

Interval Tested 4569 4603 Zone Tested Lower Pennsylv
 Anchor Length _____ 34 Drill Pipe Run 4318 Mud Wt. 9.5
 Top Packer Depth _____ 4564 Drill Collars Run 233 Vis 57
 Bottom Packer Depth _____ 4569 Wt. Pipe Run _____ WL 7.6
 Total Depth _____ 4603 Chlorides 9800 ppm System LCM 2

Blow Description IF: 1/4 blow died in 8 min.
FS: No return.
FK: No blow.
FS: No return.

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

Rec Total 5 BHT 116 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 2498 Test 1250 T-On Location 5:15
 (B) First Initial Flow 20 Jars 250 T-Started 5:26
 (C) First Final Flow 20 Safety Joint 75 T-Open 7:51
 (D) Initial Shut-In 112 Circ Sub N/L T-Pulled 10:51
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 12:55
 (F) Second Final Flow 21 Mileage 140- 201.50 Comments _____
 (G) Final Shut-In 63 Sampler _____
 (H) Final Hydrostatic 2366 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Sub Total 1776.50
 Total 1776.50
 MP/DST Disc't _____

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59662

Well Name & No. Kruto 3-29 Test No. 4 Date 11-15-14
 Company Murfin Drilling Co Elevation 3219 KB 3208 GL
 Address _____
 Co. Rep / Geo. Robert Hendrix Rig Murfin 22
 Location: Sec. 29 Twp. 10 Rge. 34 Co. Thomas State KS

Interval Tested 4654 4698 Zone Tested Johnson zone
 Anchor Length _____ Drill Pipe Run 4403 Mud Wt. 9.5
 Top Packer Depth _____ Drill Collars Run 233 Vis 63
 Bottom Packer Depth _____ Wt. Pipe Run _____ WL 8.0
 Total Depth 4698 Chlorides 11,200 ppm System LCM 2
 Blow Description IF: 1/4 blow built to 3 1/2 in 30 min,
FS: NO return,
FF: Surface blow built to 7 in 60 min,
FS: NO return,

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>oil</u>	<u>100</u>			
<u>60</u>	<u>OCM</u>	<u>30</u>		<u>70</u>	
	<u>310 GIP</u>				

Rec Total 120 BHT 122 Gravity 24 API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2446</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>3:30</u>
(B) First Initial Flow <u>26</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>4:05</u>
(C) First Final Flow <u>39</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>6:11</u>
(D) Initial Shut-In <u>272</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIL</u>	T-Pulled <u>10:11</u>
(E) Second Initial Flow <u>41</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>12:35</u>
(F) Second Final Flow <u>63</u>	<input checked="" type="checkbox"/> Mileage <u>140 -</u> <u>201.50</u>	Comments _____
(G) Final Shut-In <u>265</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2477</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1776.50</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1776.50</u>	

Approved By [Signature] Our Representative [Signature]
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