



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste300
Wichita, KS 67202-1216

ATTN: Tom Funk

Welch #1-18

18-16s-32w Scott,KS

Start Date: 2012.09.05 @ 08:50:28

End Date: 2012.09.05 @ 15:45:28

Job Ticket #: 48298 DST #: 1

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

Printed: 2012.09.13 @ 15:13:30



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 48298

DST#: 1

ATTN: Tom Funk

Test Start: 2012.09.05 @ 08:50:28

GENERAL INFORMATION:

Formation: **B**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 10:40:13
 Time Test Ended: 15:45:28
 Interval: **3956.00 ft (KB) To 3982.00 ft (KB) (TVD)**
 Total Depth: 3982.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Shane McBride
 Unit No: 55
 Reference Elevations: 2966.00 ft (KB)
 2955.00 ft (CF)
 KB to GR/CF: 11.00 ft

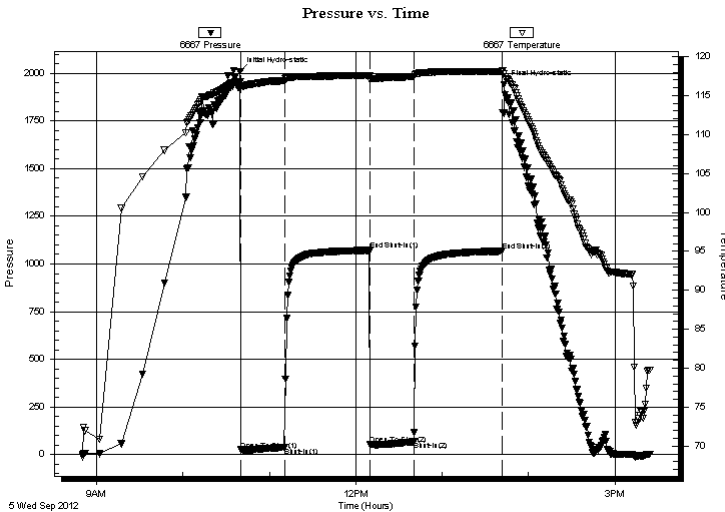
Serial #: 6667

Outside

Press @ Run Depth: 68.81 psig @ 3957.00 ft (KB)
 Start Date: 2012.09.05 End Date: 2012.09.05
 Start Time: 08:50:28 End Time: 15:24:28
 Capacity: 8000.00 psig
 Last Calib.: 2012.09.05
 Time On Btm: 2012.09.05 @ 10:39:43
 Time Off Btm: 2012.09.05 @ 13:42:58

TEST COMMENT: Weak surface blow
 No return
 No blow, Weak surface blow in 10 min.
 No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2006.98	116.82	Initial Hydro-static
1	25.45	116.04	Open To Flow (1)
31	40.37	116.92	Shut-In(1)
90	1071.72	117.59	End Shut-In(1)
90	53.90	117.08	Open To Flow (2)
121	68.81	117.44	Shut-In(2)
182	1067.41	118.12	End Shut-In(2)
184	1940.94	117.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	w c m 15%w 85%m	0.44

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc
 250 N Water Ste300
 Wichita, KS 67202-1216
 ATTN: Tom Funk

18-16s-32w Scott,KS
Welch #1-18
 Job Ticket: 48298 **DST#: 1**
 Test Start: 2012.09.05 @ 08:50:28

GENERAL INFORMATION:

Formation: **B**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 10:40:13
 Time Test Ended: 15:45:28
 Interval: **3956.00 ft (KB) To 3982.00 ft (KB) (TVD)**
 Total Depth: 3982.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Shane McBride
 Unit No: 55
 Reference Elevations: 2966.00 ft (KB)
 2955.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 8368 Inside
 Press @RunDepth: psig @ 3957.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.09.05 End Date: 2012.09.05 Last Calib.: 2012.09.05
 Start Time: 08:50:36 End Time: 15:24:36 Time On Btm:
 Time Off Btm:

TEST COMMENT: Weak surface blow
 No return
 No blow , Weak surface blow in 10 min.
 No return



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

Recovery		
Length (ft)	Description	Volume (bbl)
90.00	w c m 15%w 85%m	0.44

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 48298

DST#: 1

ATTN: Tom Funk

Test Start: 2012.09.05 @ 08:50:28

Tool Information

Drill Pipe:	Length: 3673.00 ft	Diameter: 3.80 inches	Volume: 51.52 bbl	Tool Weight:	1500.00 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: 266.00 ft	Diameter: 2.25 inches	Volume: 1.31 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 52.83 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial	68000.00 lb
Depth to Top Packer:	3956.00 ft			Final	68000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	26.00 ft				
Tool Length:	46.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3937.00	
Shut In Tool	5.00			3942.00	
Hydraulic tool	5.00			3947.00	
Packer	5.00			3952.00	20.00 Bottom Of Top Packer
Packer	4.00			3956.00	
Stubb	1.00			3957.00	
Recorder	0.00	8368	Inside	3957.00	
Recorder	0.00	6667	Outside	3957.00	
Perforations	20.00			3977.00	
Bullnose	5.00			3982.00	26.00 Bottom Packers & Anchor
Total Tool Length:	46.00				



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 48298

DST#: 1

ATTN: Tom Funk

Test Start: 2012.09.05 @ 08:50:28

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:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.36 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	w c m 15%w 85%m	0.443

Total Length: 90.00 ft Total Volume: 0.443 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

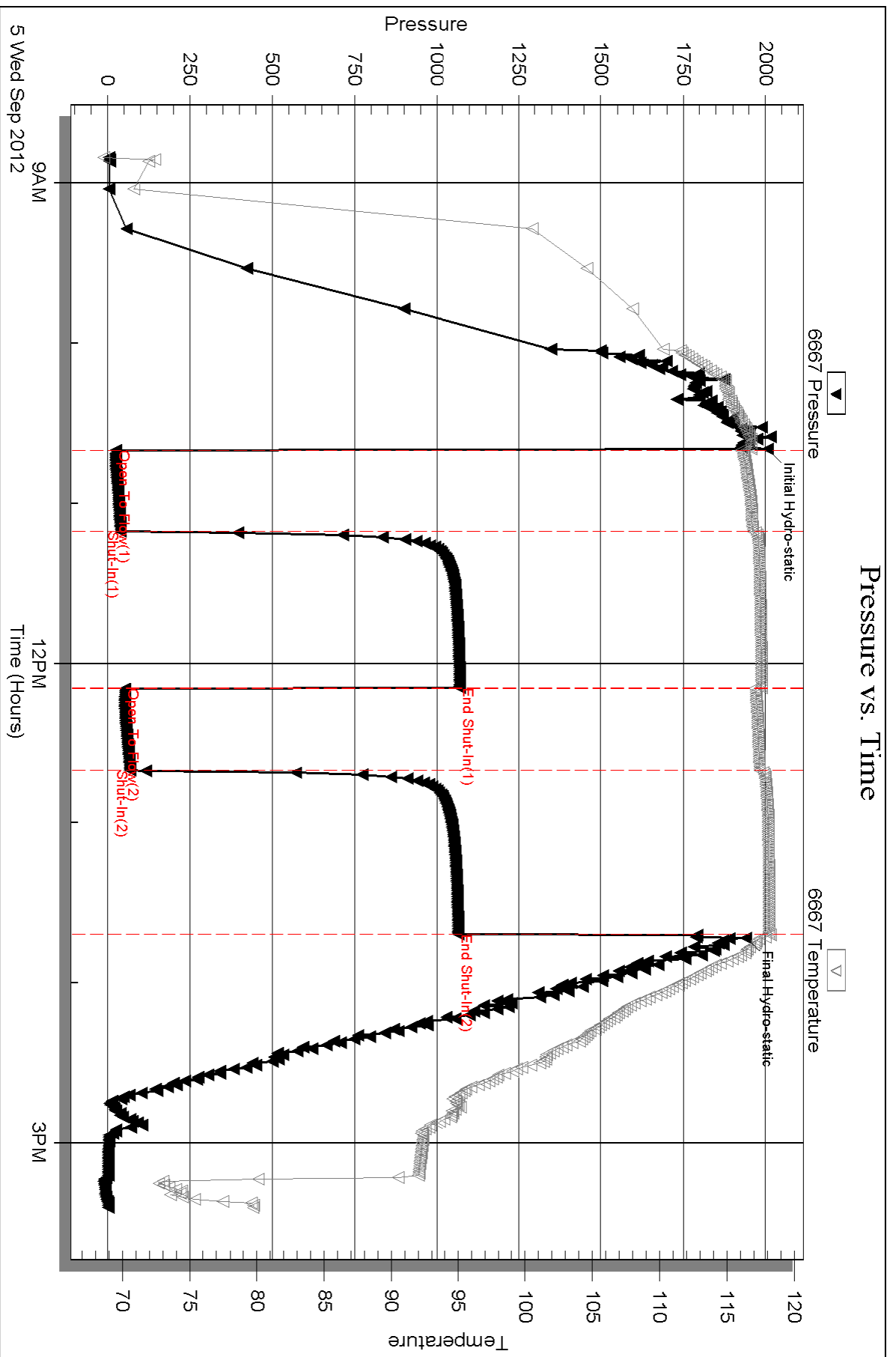
Recovery Comments:

Serial #: 6667

Outside Murfin Drilling Company Inc

Welch #1-18

DST Test Number: 1



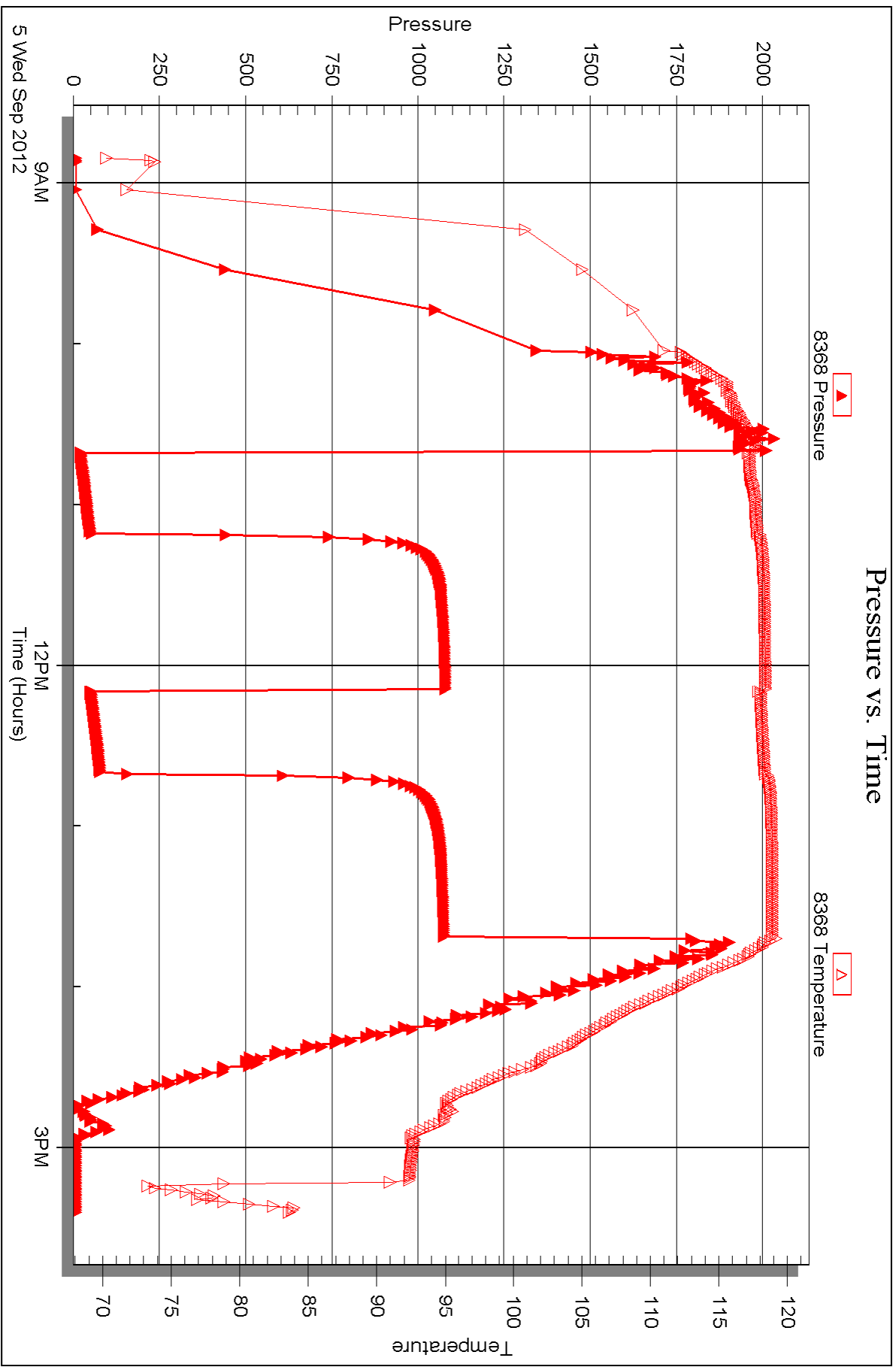
Serial #: 8368

Inside

Murfin Drilling Company Inc

Welch #1-18

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste300
Wichita, KS 67202-1216

ATTN: Tom Funk

Welch #1-18

18-16s-32w Scott,KS

Start Date: 2012.09.06 @ 10:40:30

End Date: 2012.09.06 @ 17:35:45

Job Ticket #: 48299 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.09.13 @ 15:12:41



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 48299

DST#: 2

ATTN: Tom Funk

Test Start: 2012.09.06 @ 10:40:30

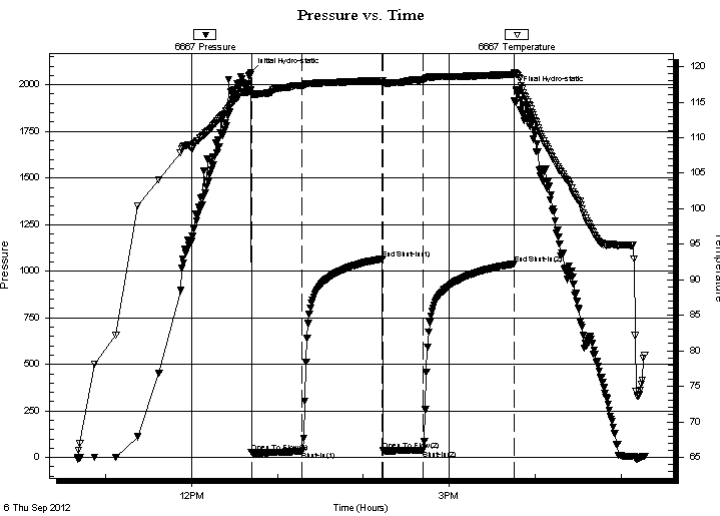
GENERAL INFORMATION:

Formation: **I**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 12:41:45
 Time Test Ended: 17:35:45
 Interval: **4142.00 ft (KB) To 4170.00 ft (KB) (TVD)**
 Total Depth: 4170.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Shane McBride
 Unit No: 55
 Reference Elevations: 2966.00 ft (KB)
 2955.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 6667 Outside

Press @ RunDepth: 40.79 psig @ 4143.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.09.06 End Date: 2012.09.06 Last Calib.: 2012.09.06
 Start Time: 10:40:30 End Time: 17:16:45 Time On Btm: 2012.09.06 @ 12:41:30
 Time Off Btm: 2012.09.06 @ 15:46:45

TEST COMMENT: Weak blow died in 16 min.
 No return
 No blow
 No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2066.25	116.69	Initial Hydro-static
1	26.88	116.14	Open To Flow (1)
36	32.79	117.33	Shut-In(1)
92	1066.47	118.06	End Shut-In(1)
93	37.59	117.71	Open To Flow (2)
120	40.79	118.13	Shut-In(2)
184	1039.63	118.88	End Shut-In(2)
186	1971.27	118.88	Final Hydro-static

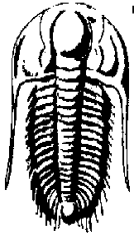
Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100% m	0.05

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc
 250 N Water Ste300
 Wichita, KS 67202-1216
 ATTN: Tom Funk

18-16s-32w Scott,KS

Welch #1-18

Job Ticket: 48299

DST#: 2

Test Start: 2012.09.06 @ 10:40:30

GENERAL INFORMATION:

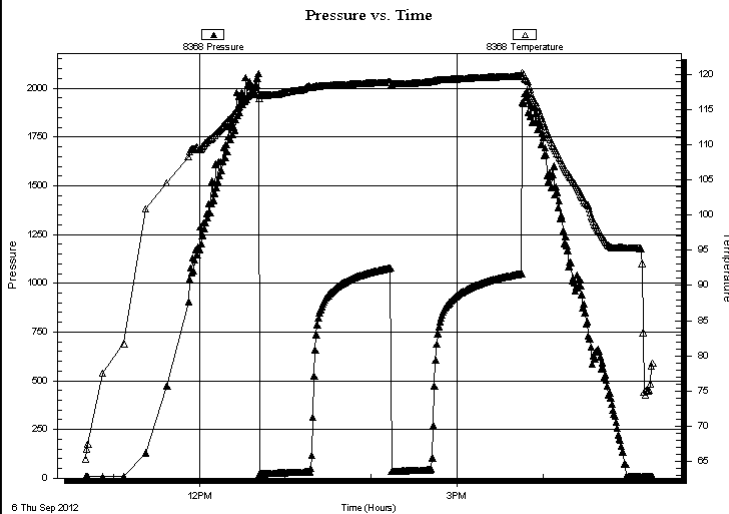
Formation: I
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 12:41:45
 Time Test Ended: 17:35:45
 Interval: **4142.00 ft (KB) To 4170.00 ft (KB) (TVD)**
 Total Depth: 4170.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Shane McBride
 Unit No: 55
 Reference Elevations: 2966.00 ft (KB)
 2955.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 8368

Inside

Press @ Run Depth: psig @ 4143.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.09.06 End Date: 2012.09.06 Last Calib.: 1899.12.30
 Start Time: 10:40:39 End Time: 17:16:54 Time On Btm:
 Time Off Btm:

TEST COMMENT: Weak blow died in 16 min.
 No return
 No blow
 No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100% m	0.05

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 Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 48299

DST#: 2

ATTN: Tom Funk

Test Start: 2012.09.06 @ 10:40:30

Tool Information

Drill Pipe:	Length: 3860.00 ft	Diameter: 3.80 inches	Volume: 54.15 bbl	Tool Weight:	1500.00 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: 266.00 ft	Diameter: 2.25 inches	Volume: 1.31 bbl	Weight to Pull Loose:	95000.00 lb
			<u>Total Volume: 55.46 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial	73000.00 lb
Depth to Top Packer:	4142.00 ft			Final	73000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	28.00 ft				
Tool Length:	48.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4123.00	
Shut In Tool	5.00			4128.00	
Hydraulic tool	5.00			4133.00	
Packer	5.00			4138.00	20.00 Bottom Of Top Packer
Packer	4.00			4142.00	
Stubb	1.00			4143.00	
Recorder	0.00	8368	Inside	4143.00	
Recorder	0.00	6667	Outside	4143.00	
Perforations	22.00			4165.00	
Bullnose	5.00			4170.00	28.00 Bottom Packers & Anchor
Total Tool Length:	48.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 48299

DST#: 2

ATTN: Tom Funk

Test Start: 2012.09.06 @ 10:40:30

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:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.35 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud 100%m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

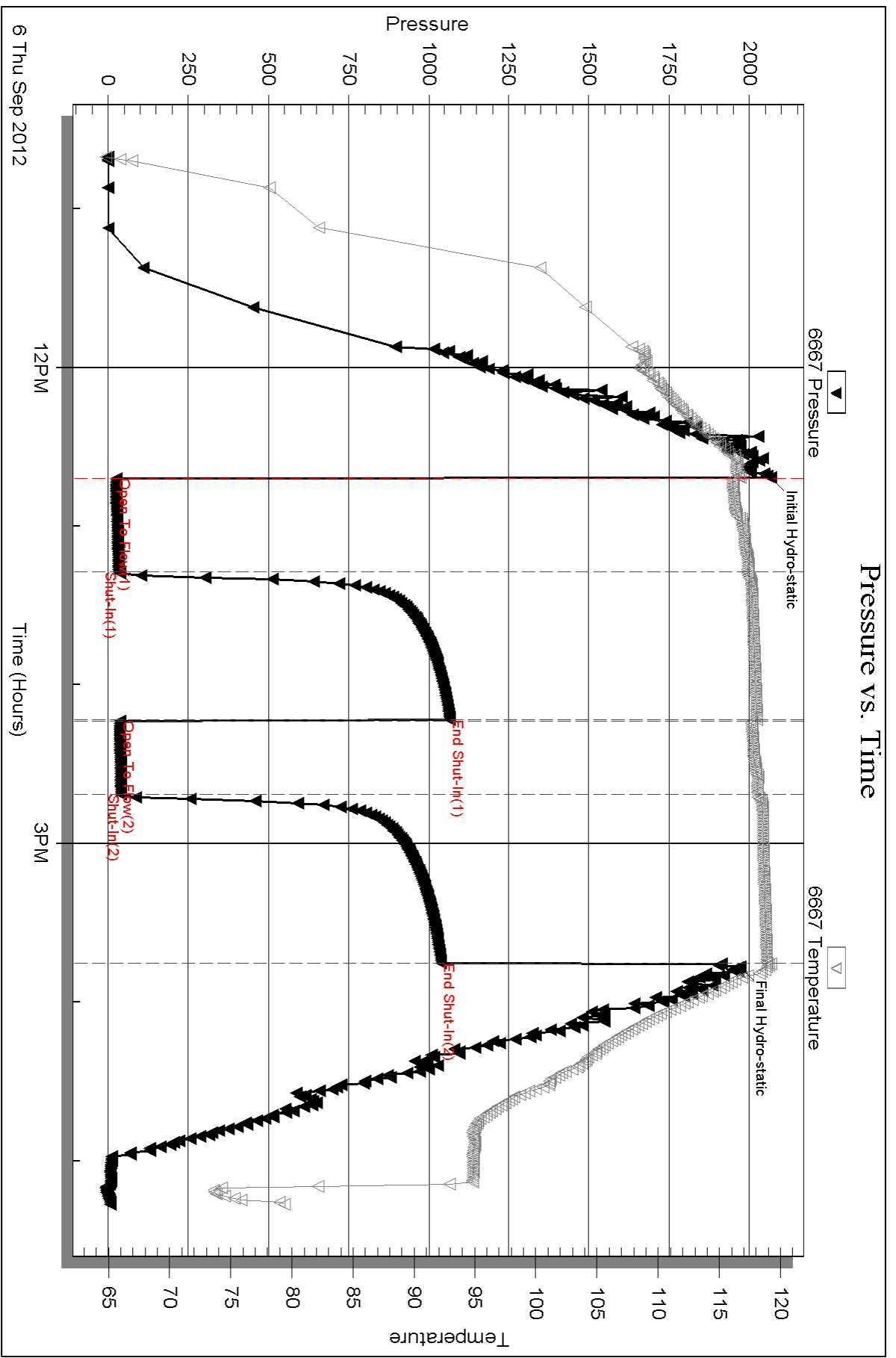
Recovery Comments:

Serial #: 6667

Outside Murfin Drilling Company Inc

Welch #1-18

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 48299

Printed: 2012.09.13 @ 15:12:45

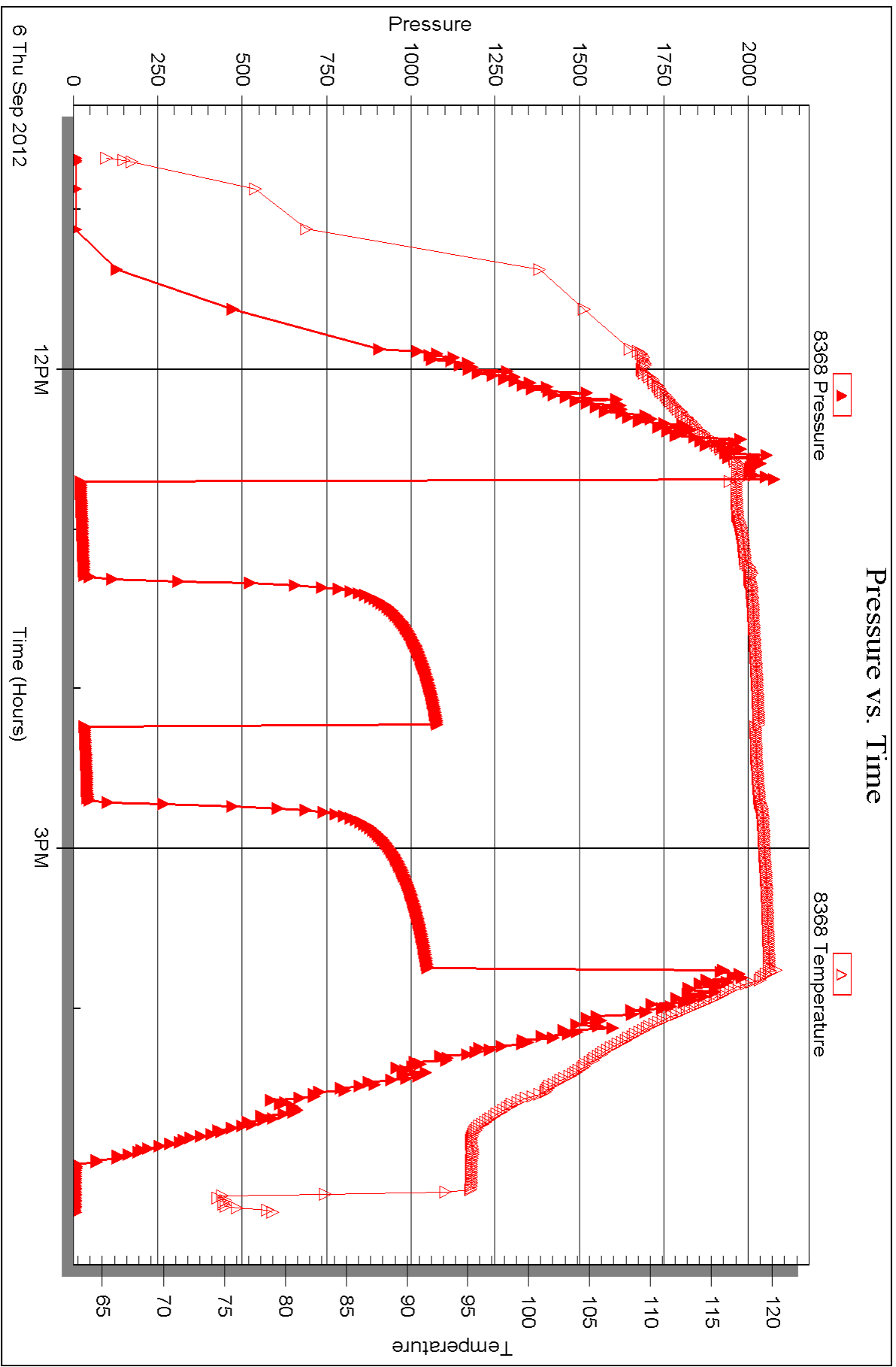
Serial #: 8368

Inside

Murfin Drilling Company Inc

Welch #1-18

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste300
Wichita, KS 67202-1216

ATTN: Tom Funk

Welch #1-18

18-16s-32w Scott,KS

Start Date: 2012.09.07 @ 19:01:13

End Date: 2012.09.08 @ 01:50:28

Job Ticket #: 48300 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.09.13 @ 15:10:55



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 48300

DST#: 3

ATTN: Tom Funk

Test Start: 2012.09.07 @ 19:01:13

GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 20:43:58

Time Test Ended: 01:50:28

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 55

Interval: 4350.00 ft (KB) To 4395.00 ft (KB) (TVD)

Reference Elevations: 2966.00 ft (KB)

Total Depth: 4395.00 ft (KB) (TVD)

2955.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8368 Inside

Press @ Run Depth: 26.91 psig @ 4351.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.09.07

End Date:

2012.09.08

Last Calib.: 2012.09.08

Start Time: 19:01:13

End Time:

01:36:28

Time On Btm: 2012.09.07 @ 20:43:43

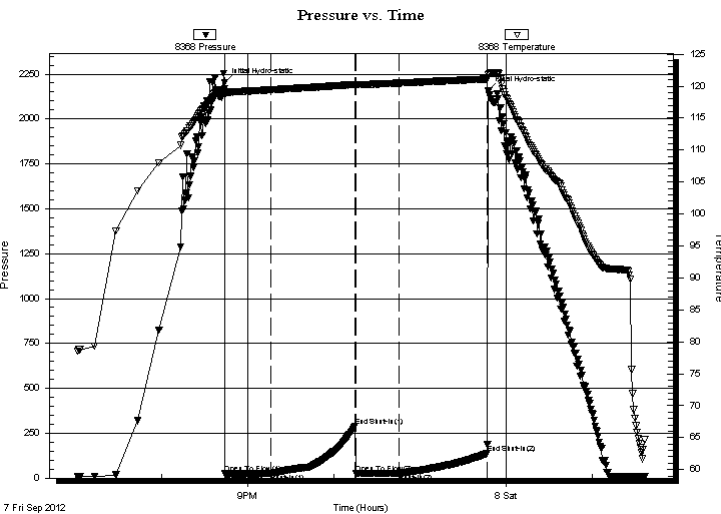
Time Off Btm: 2012.09.07 @ 23:47:28

TEST COMMENT: Weak blow died in 8 min.

No return

No blow

No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2204.11	119.60	Initial Hydro-static
1	24.91	118.72	Open To Flow (1)
33	25.86	119.43	Shut-In(1)
91	289.32	120.26	End Shut-In(1)
92	25.55	120.14	Open To Flow (2)
122	26.91	120.48	Shut-In(2)
183	137.98	121.11	End Shut-In(2)
184	2156.55	121.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	o c m 10%o 90%o	0.01

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc
 250 N Water Ste300
 Wichita, KS 67202-1216
 ATTN: Tom Funk

18-16s-32w Scott,KS
Welch #1-18
 Job Ticket: 48300 **DST#: 3**
 Test Start: 2012.09.07 @ 19:01:13

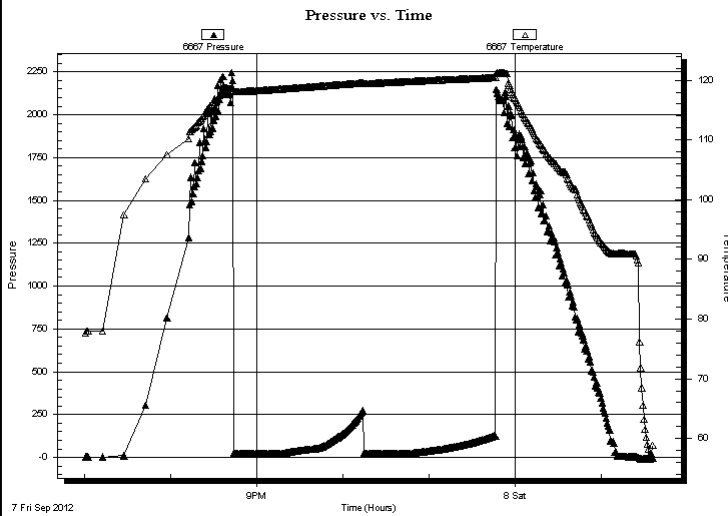
GENERAL INFORMATION:

Formation: **Altamont**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 20:43:58
 Time Test Ended: 01:50:28
 Interval: **4350.00 ft (KB) To 4395.00 ft (KB) (TVD)**
 Total Depth: 4395.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)
 Tester: Shane McBride
 Unit No: 55
 Reference Elevations: 2966.00 ft (KB)
 2955.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 6667 Outside
 Press @ Run Depth: psig @ 4351.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.09.07 End Date: 2012.09.08 Last Calib.: 2012.09.08
 Start Time: 19:00:33 End Time: 01:35:48 Time On Btm:
 Time Off Btm:

TEST COMMENT: Weak blow died in 8 min.
 No return
 No blow
 No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	o c m 10%o 90%o	0.01

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 Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 48300

DST#: 3

ATTN: Tom Funk

Test Start: 2012.09.07 @ 19:01:13

Tool Information

Drill Pipe:	Length: 4081.00 ft	Diameter: 3.80 inches	Volume: 57.25 bbl	Tool Weight: 1500.00 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: 266.00 ft	Diameter: 2.25 inches	Volume: 1.31 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 58.56 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 73000.00 lb
Depth to Top Packer:	4350.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	65.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4331.00	
Shut In Tool	5.00			4336.00	
Hydraulic tool	5.00			4341.00	
Packer	5.00			4346.00	20.00 Bottom Of Top Packer
Packer	4.00			4350.00	
Stubb	1.00			4351.00	
Recorder	0.00	8368	Inside	4351.00	
Recorder	0.00	6667	Outside	4351.00	
Perforations	6.00			4357.00	
Change Over Sub	1.00			4358.00	
Drill Pipe	31.00			4389.00	
Change Over Sub	1.00			4390.00	
Bullnose	5.00			4395.00	45.00 Bottom Packers & Anchor

Total Tool Length: 65.00



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TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 48300

DST#: 3

ATTN: Tom Funk

Test Start: 2012.09.07 @ 19:01:13

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:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.37 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	o c m 10%o 90%o	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

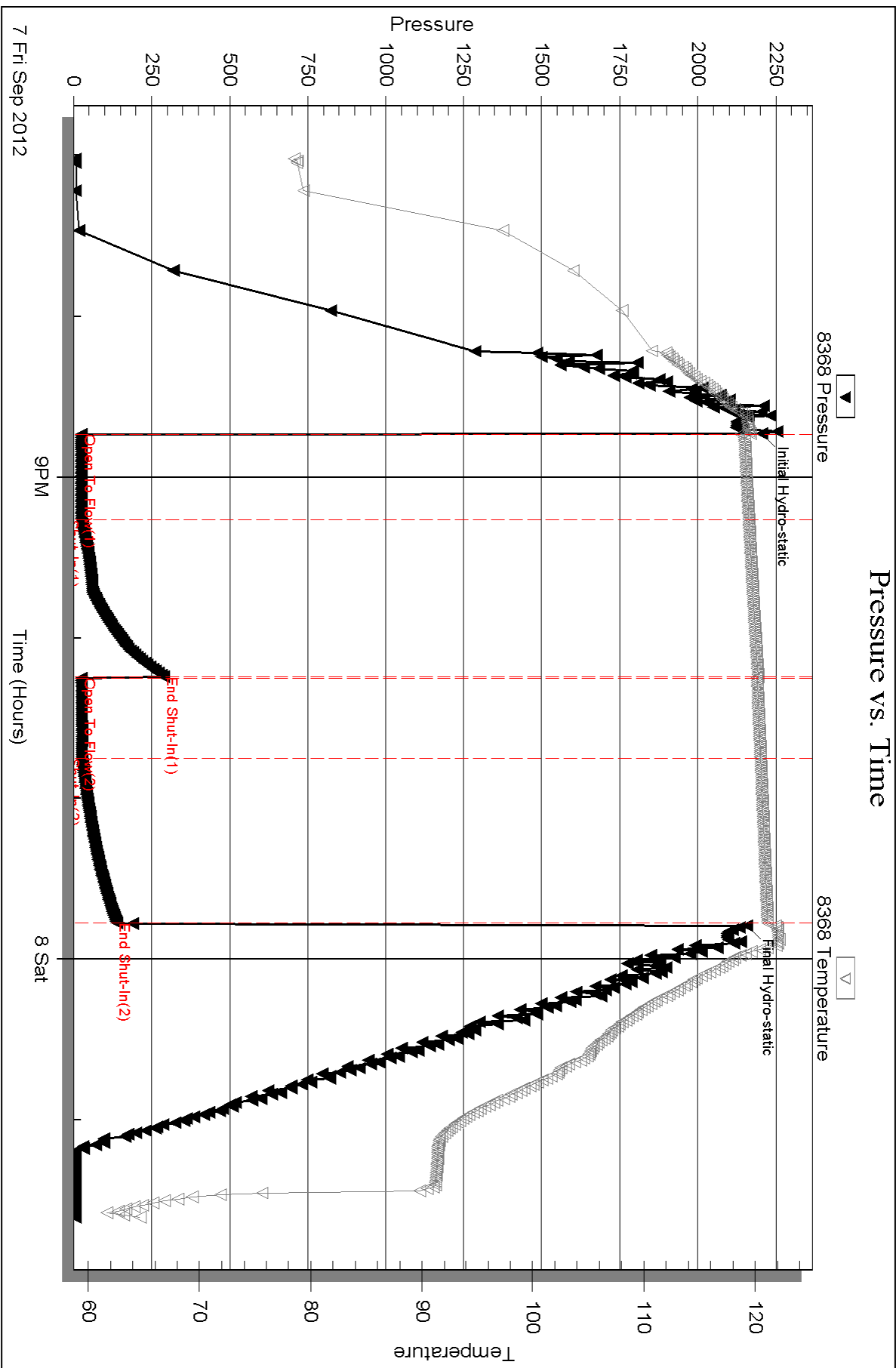
Serial #: 8368

Inside

Murfin Drilling Company Inc

Welch #1-18

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 48300

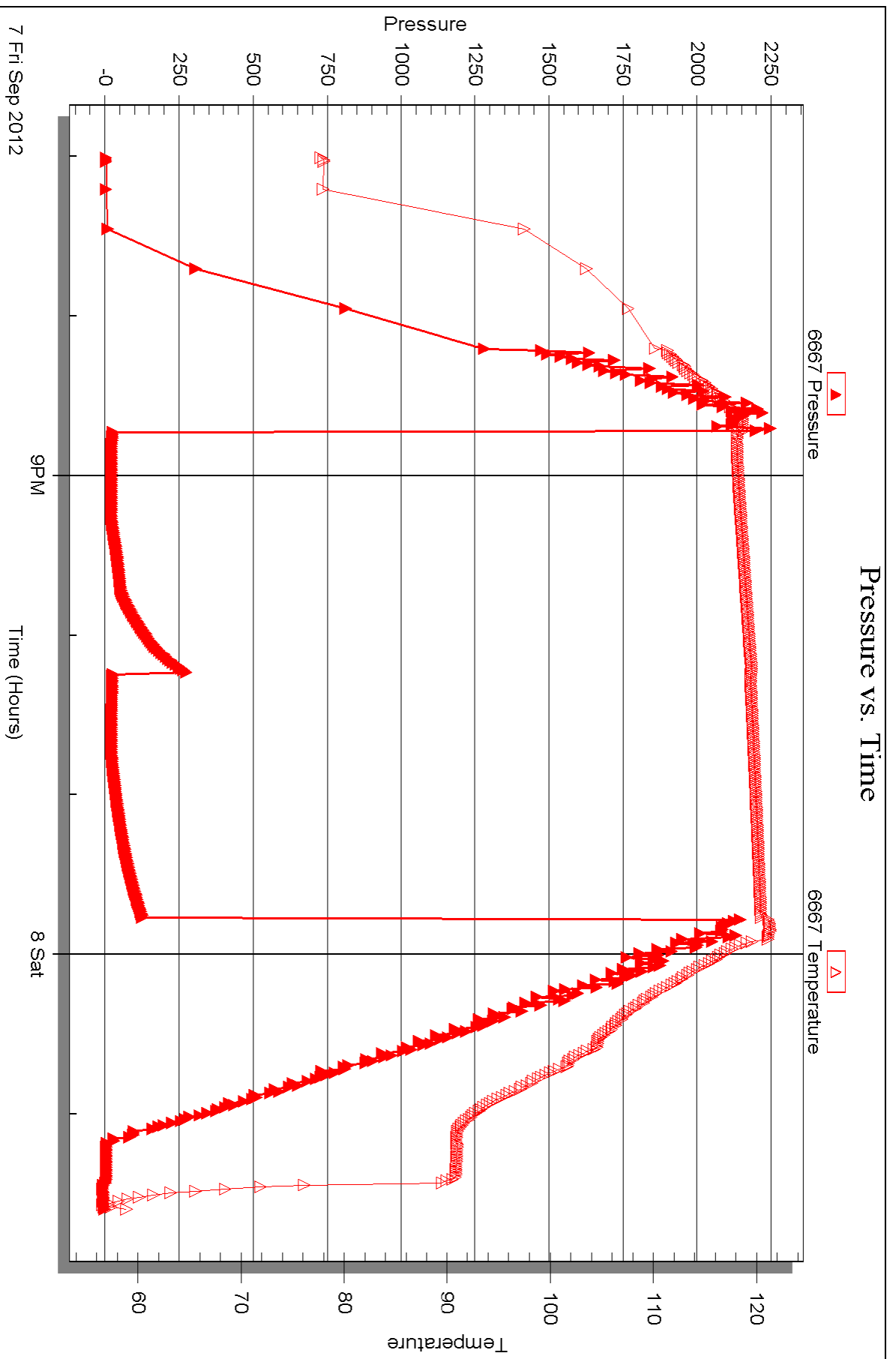
Printed: 2012.09.13 @ 15:11:00

Serial #: 6667

Outside Murfin Drilling Company Inc

Welch #1-18

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste300
Wichita, KS 67202-1216

ATTN: Tom Funk

Welch #1-18

18-16s-32w Scott,KS

Start Date: 2012.09.08 @ 17:21:04

End Date: 2012.09.09 @ 00:20:04

Job Ticket #: 50151 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.09.13 @ 15:10:09



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfyn Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 50151

DST#: 4

ATTN: Tom Funk

Test Start: 2012.09.08 @ 17:21:04

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 19:12:19

Time Test Ended: 00:20:04

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 55

Interval: 4501.00 ft (KB) To 4560.00 ft (KB) (TVD)

Reference Elevations: 2966.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

2955.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8368

Inside

Press @ Run Depth: 35.13 psig @ 4502.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.09.08

End Date:

2012.09.09

Last Calib.:

2012.09.09

Start Time:

17:21:04

End Time:

00:06:04

Time On Btm:

2012.09.08 @ 19:11:49

Time Off Btm:

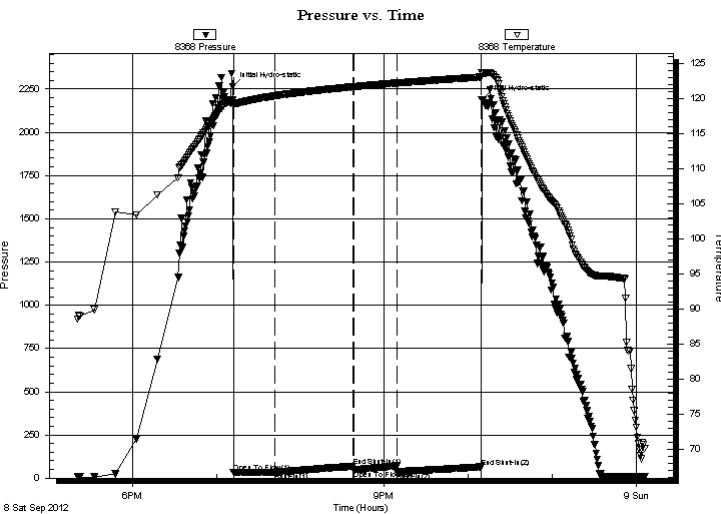
2012.09.08 @ 22:09:34

TEST COMMENT: Weak blow died in 12 min.

No return

No blow

No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2266.16	119.76	Initial Hydro-static
1	33.04	118.95	Open To Flow (1)
30	34.97	120.35	Shut-In(1)
86	67.79	121.64	End Shut-In(1)
87	47.47	121.64	Open To Flow (2)
118	35.13	122.16	Shut-In(2)
177	64.95	123.02	End Shut-In(2)
178	2187.68	123.58	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud 100% m	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 50151

DST#: 4

ATTN: Tom Funk

Test Start: 2012.09.08 @ 17:21:04

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 19:12:19

Time Test Ended: 00:20:04

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 55

Interval: 4501.00 ft (KB) To 4560.00 ft (KB) (TVD)

Reference Elevations: 2966.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

2955.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 6667 **Outside**

Press @ Run Depth: psig @ 4502.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.09.08

End Date:

2012.09.09

Last Calib.:

2012.09.09

Start Time:

17:20:49

End Time:

00:05:34

Time On Btm:

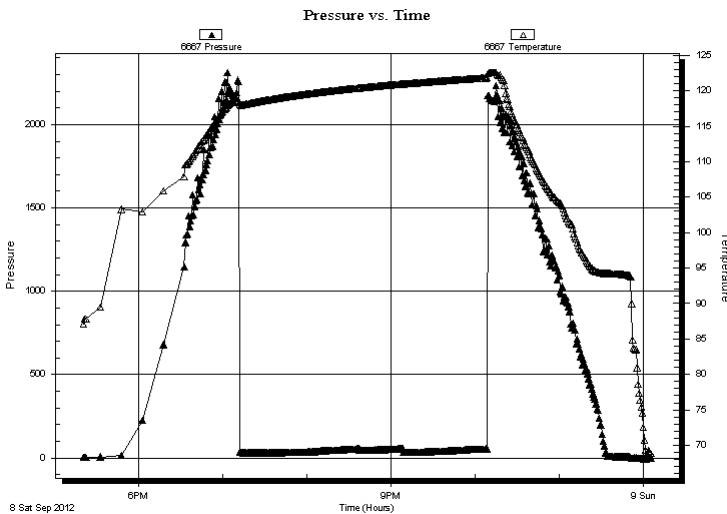
Time Off Btm:

TEST COMMENT: Weak blow died in 12 min.

No return

No blow

No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud 100%m	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 Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 50151

DST#: 4

ATTN: Tom Funk

Test Start: 2012.09.08 @ 17:21:04

Tool Information

Drill Pipe:	Length: 4238.00 ft	Diameter: 3.80 inches	Volume: 59.45 bbl	Tool Weight: 1500.00 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: 266.00 ft	Diameter: 2.25 inches	Volume: 1.31 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 60.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4501.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	59.00 ft			
Tool Length:	79.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4482.00	
Shut In Tool	5.00			4487.00	
Hydraulic tool	5.00			4492.00	
Packer	5.00			4497.00	20.00 Bottom Of Top Packer
Packer	4.00			4501.00	
Stubb	1.00			4502.00	
Recorder	0.00	8368	Inside	4502.00	
Recorder	0.00	6667	Outside	4502.00	
Perforations	20.00			4522.00	
Change Over Sub	1.00			4523.00	
Drill Pipe	31.00			4554.00	
Change Over Sub	1.00			4555.00	
Bullnose	5.00			4560.00	59.00 Bottom Packers & Anchor

Total Tool Length: 79.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 50151

DST#: 4

ATTN: Tom Funk

Test Start: 2012.09.08 @ 17:21:04

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:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.36 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 36000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	mud 100%m	0.005

Total Length: 1.00 ft Total Volume: 0.005 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8368

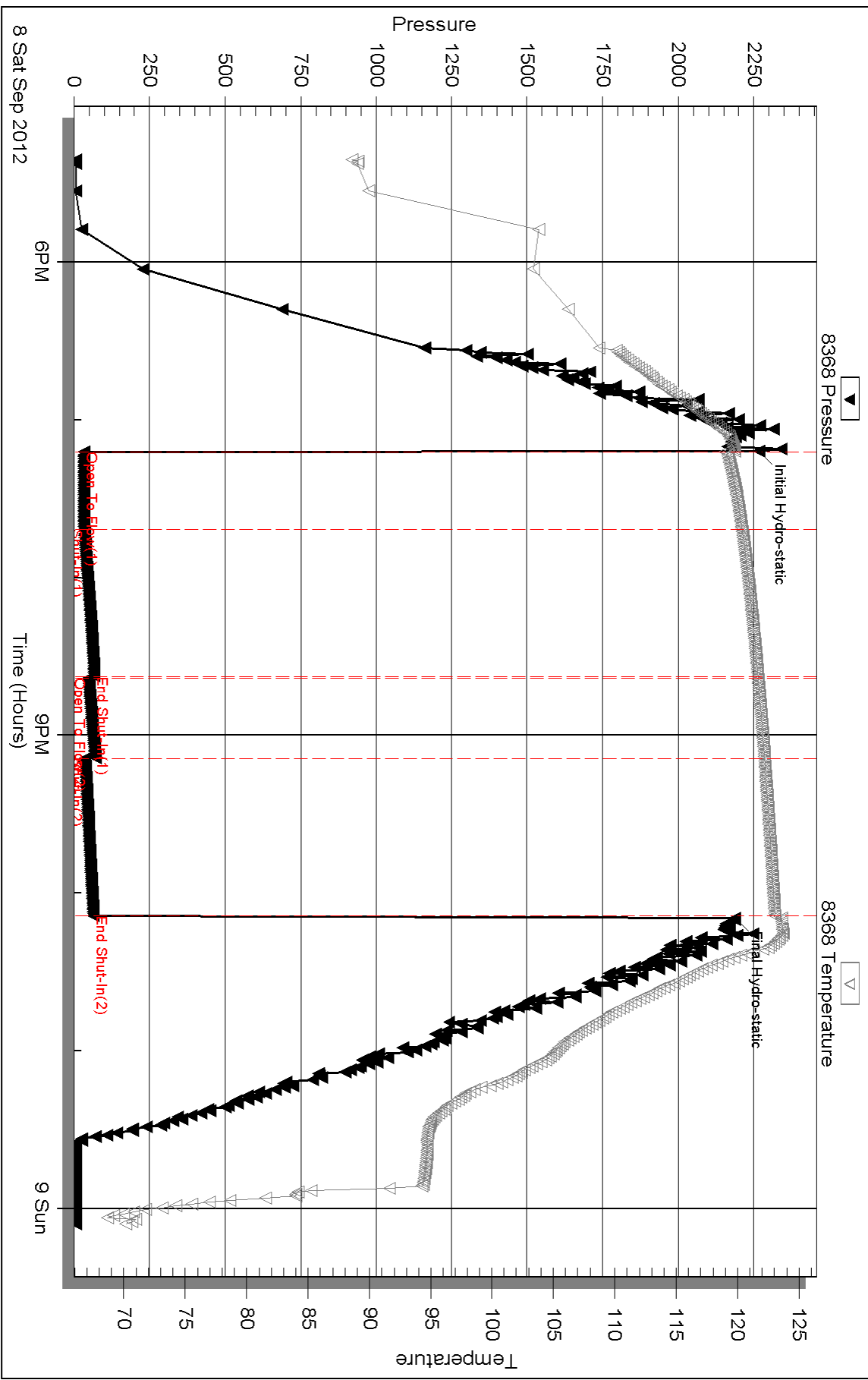
Inside

Murfin Drilling Company Inc

Welch #1-18

DST Test Number: 4

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 50151

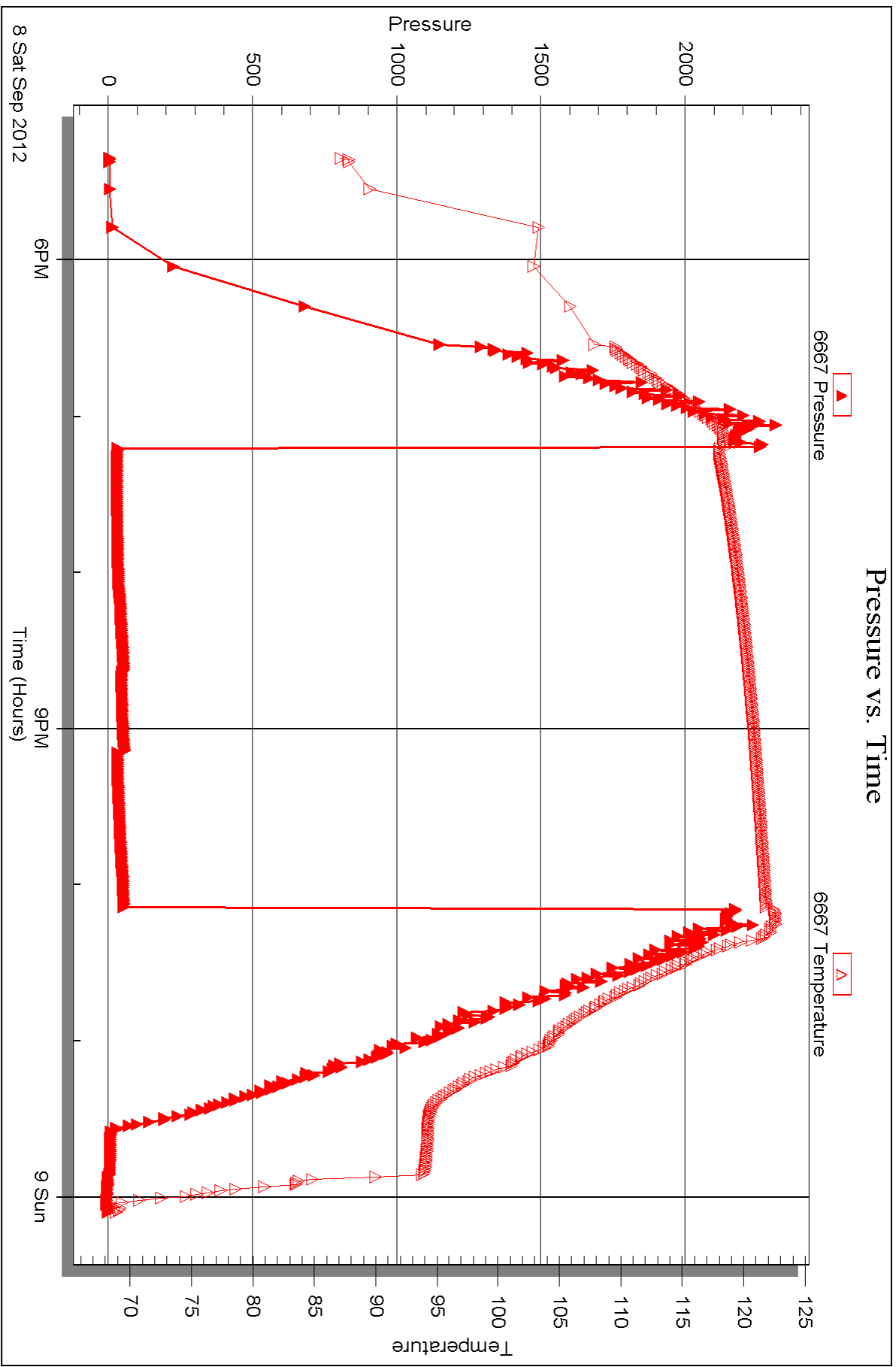
Printed: 2012.09.13 @ 15:10:13

Serial #: 6667

Outside Murfin Drilling Company Inc

Welch #1-18

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste300
Wichita, KS 67202-1216

ATTN: Tom Funk

Welch #1-18

18-16s-32w Scott,KS

Start Date: 2012.09.09 @ 07:30:25

End Date: 2012.09.09 @ 15:57:40

Job Ticket #: 50152 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.09.13 @ 15:09:12



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 50152

DST#: 5

ATTN: Tom Funk

Test Start: 2012.09.09 @ 07:30:25

GENERAL INFORMATION:

Formation: **Basal Sand**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 09:43:10

Time Test Ended: 15:57:40

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 55

Interval: 4560.00 ft (KB) To 4600.00 ft (KB) (TVD)

Reference Elevations: 2966.00 ft (KB)

Total Depth: 4600.00 ft (KB) (TVD)

2955.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 6667 Outside

Press @ Run Depth: 121.04 psig @ 4561.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.09.09

End Date: 2012.09.09

Last Calib.: 2012.09.09

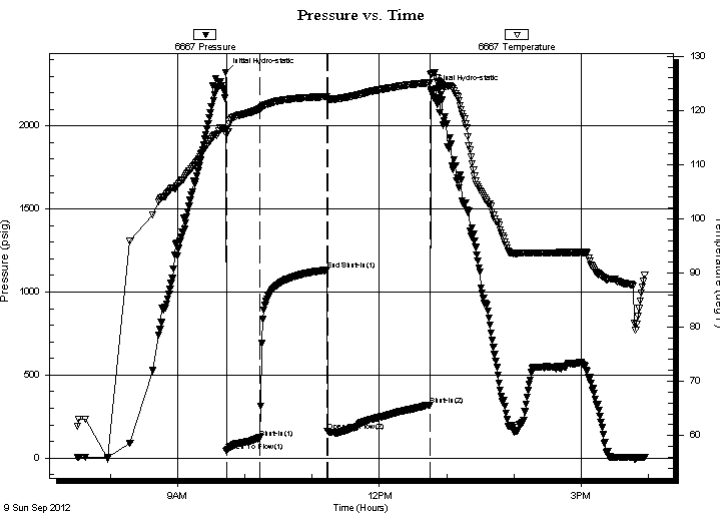
Start Time: 07:30:25

End Time: 15:57:40

Time On Btm: 2012.09.09 @ 09:42:55

Time Off Btm: 2012.09.09 @ 12:46:10

TEST COMMENT: B.O.B. in 5 min.
B.O.B. return in 12 min
B.O.B. @ open
Bled off throughout shutin....No final shut in due to bottom o-ring failure in shut in tool



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2323.30	116.71	Initial Hydro-static
1	41.32	115.54	Open To Flow (1)
30	121.04	120.24	Shut-In(1)
90	1132.68	122.58	End Shut-In(1)
91	159.59	122.15	Open To Flow (2)
182	319.44	125.15	Shut-In(2)
184	2217.62	126.72	Final Hydro-static

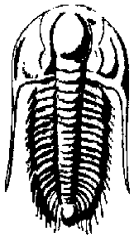
Recovery

Length (ft)	Description	Volume (bbl)
120.00	s m c g o 10m 20g 70o	0.59
900.00	c g o reversed out 20g 80o	11.29
120.00	c g o 20g 80o	1.68
0.00	1440' gas in pipe	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

250 N Water Ste300
Wichita, KS 67202-1216

ATTN: Tom Funk

18-16s-32w Scott,KS

Welch #1-18

Job Ticket: 50152

DST#: 5

Test Start: 2012.09.09 @ 07:30:25

GENERAL INFORMATION:

Formation: **Basal Sand**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 09:43:10

Time Test Ended: 15:57:40

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 55

Interval: 4560.00 ft (KB) To 4600.00 ft (KB) (TVD)

Total Depth: 4600.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2966.00 ft (KB)

2955.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8368 Inside

Press @ Run Depth: psig @ 4561.00 ft (KB)

Start Date: 2012.09.09

End Date: 2012.09.09

Start Time: 07:31:04

End Time: 15:59:04

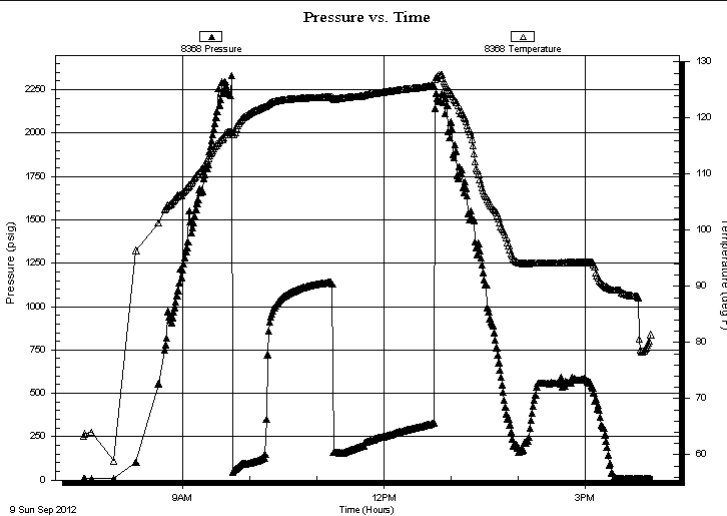
Capacity: 8000.00 psig

Last Calib.: 2012.09.09

Time On Btm:

Time Off Btm:

TEST COMMENT: B.O.B. in 5 min.
B.O.B. return in 12 min
B.O.B. @ open
Bled off throughout shutin....No final shut in due to bottom o-ring failure in shut in tool



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
120.00	s m c g o 10m 20g 70o	0.59
900.00	c g o reversed out 20g 80o	11.29
120.00	c g o 20g 80o	1.68
0.00	1440' gas in pipe	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 Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 50152

DST#: 5

ATTN: Tom Funk

Test Start: 2012.09.09 @ 07:30:25

Tool Information

Drill Pipe:	Length: 4302.00 ft	Diameter: 3.80 inches	Volume: 60.35 bbl	Tool Weight:	1500.00 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: 266.00 ft	Diameter: 2.25 inches	Volume: 1.31 bbl	Weight to Pull Loose:	98000.00 lb
			<u>Total Volume: 61.66 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	74000.00 lb
Depth to Top Packer:	4560.00 ft			Final	78000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	40.00 ft				
Tool Length:	60.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

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

Change Over Sub	1.00			4541.00	
Shut In Tool	5.00			4546.00	
Hydraulic tool	5.00			4551.00	
Packer	5.00			4556.00	20.00 Bottom Of Top Packer
Packer	4.00			4560.00	
Stubb	1.00			4561.00	
Recorder	0.00	8368	Inside	4561.00	
Recorder	0.00	6667	Outside	4561.00	
Perforations	34.00			4595.00	
Bullnose	5.00			4600.00	40.00 Bottom Packers & Anchor
Total Tool Length:	60.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc

18-16s-32w Scott,KS

250 N Water Ste300
Wichita, KS 67202-1216

Welch #1-18

Job Ticket: 50152

DST#: 5

ATTN: Tom Funk

Test Start: 2012.09.09 @ 07:30:25

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

26 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.36 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
120.00	s m c g o 10m 20g 70o	0.590
900.00	c g o reversed out 20g 80o	11.295
120.00	c g o 20g 80o	1.683
0.00	1440' gas in pipe	0.000

Total Length: 1140.00 ft

Total Volume: 13.568 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

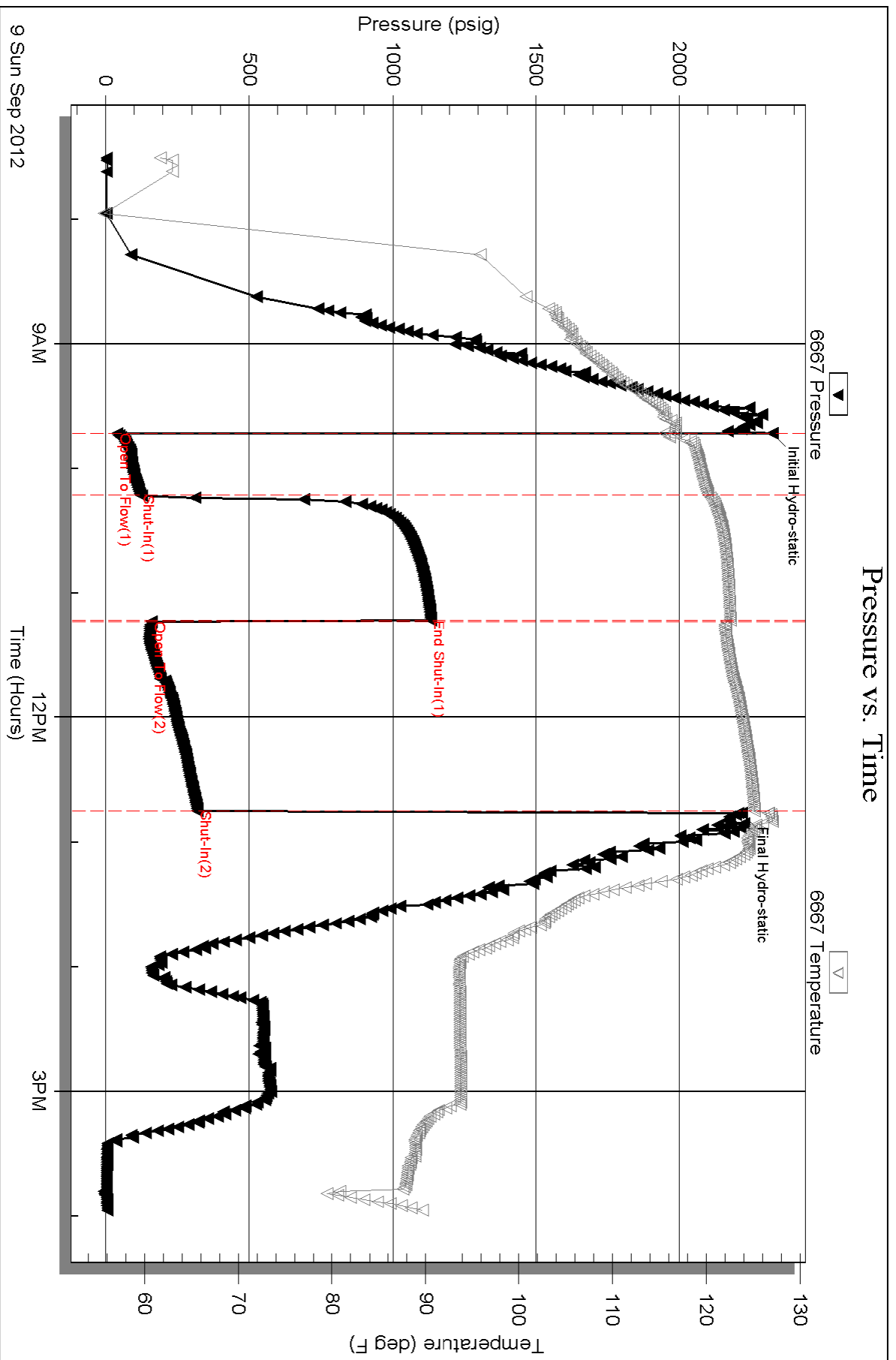
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



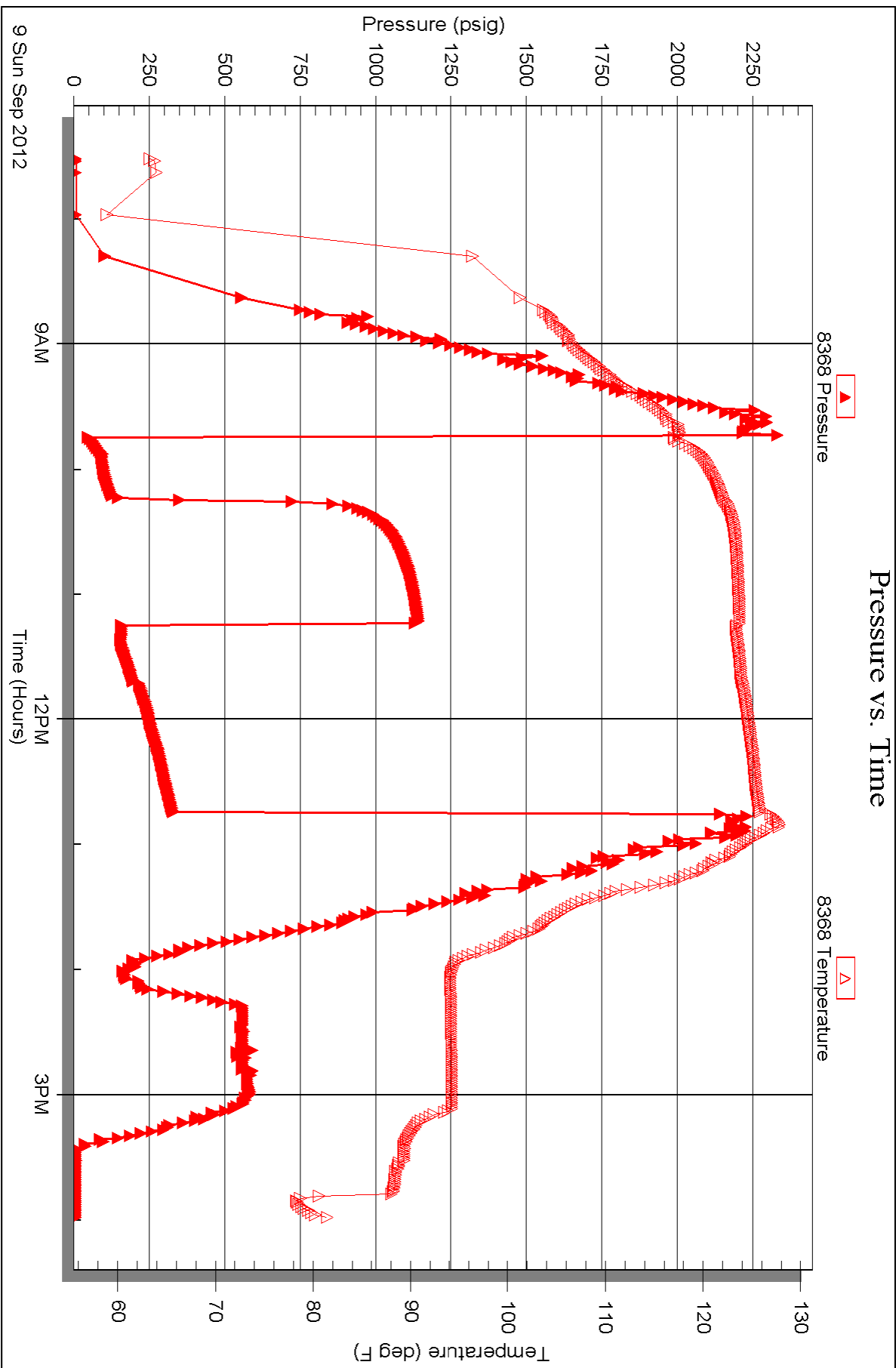
Serial #: 8368

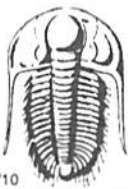
Inside

Murfin Drilling Company Inc

Welch #1-18

DST Test Number: 5





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48298

Well Name & No. Welch # 1-18 Test No. #1 Date 9/5/12
 Company Plattin Drilling Company Inc Elevation 2966 KB 2955 GL
 Address 250 N Water Ste 300 Wichita, KS 67202-1214
 Co. Rep / Geo. Tom Funk Rig Plattin #21
 Location: Sec. 18 Twp. 16S Rge. 32W Co. Scott State Ks

Interval Tested 3956 3982 Zone Tested "B"
 Anchor Length 24 Drill Pipe Run 3673' Mud Wt. 9.3
 Top Packer Depth 3951 Drill Collars Run 266' Vis 55
 Bottom Packer Depth 3956 Wt. Pipe Run --- WL 6.4
 Total Depth 3982 Chlorides 2400 ppm System LCM #60

Blow Description Weak Surface blow
No return
No blow, Weak Surface blow in 10 min
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>90'</u>	<u>WCM</u>		<u>15</u>	<u>85</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 90' BHT 118° Gravity --- API RW --- @ ---° F Chlorides --- ppm

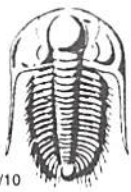
(A) Initial Hydrostatic 2006 Test 1150 T-On Location 07:50
 (B) First Initial Flow 25 Jars T-Started 08:50
 (C) First Final Flow 40 Safety Joint T-Open 10:40
 (D) Initial Shut-In 1071 Circ Sub N/E T-Pulled 13:40
 (E) Second Initial Flow 53 Hourly Standby T-Out 15:45
 (F) Second Final Flow 68 Mileage 52.70 Comments _____
 (G) Final Shut-In 1067 Sampler _____
 (H) Final Hydrostatic 1940 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1202.70
 Accessibility _____ MP/DST Disc't _____

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

Sub Total 1202.70

Approved By [Signature] 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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48299

Well Name & No. Welch # 1-18 Test No. #2 Date 9/6/12
 Company Murkin Drilling Company Inc Elevation 2966 KB 2955 GL
 Address 250 N. Water St 300 Wichita, KS 67202-1216
 Co. Rep / Geo. Tom Funk Rig Murkin #21
 Location: Sec. 18 Twp. 16S Rge. 32W Co. Scott State KS

Interval Tested 4142 4170 Zone Tested F
 Anchor Length 28 Drill Pipe Run 3860' Mud Wt. 9.5
 Top Packer Depth 4137 Drill Collars Run 266' Vis 50
 Bottom Packer Depth 4142 Wt. Pipe Run — WL 6.4
 Total Depth 4170 Chlorides 2900 ppm System LCM #6

Blow Description Weak blow dried in 16 min.
No return
No blow
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</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 10 BHT 119° Gravity — API RW — @ —° F Chlorides — ppm

(A) Initial Hydrostatic 2066 Test 1250 T-On Location —
 (B) First Initial Flow 26 Jars — T-Started 10:40
 (C) First Final Flow 32 Safety Joint — T-Open 12:42
 (D) Initial Shut-In 1066 Circ Sub N/C T-Pulled 15:42
 (E) Second Initial Flow 37 Hourly Standby — T-Out 17:35
 (F) Second Final Flow 40 Mileage 34 RT 52.70 Comments —
 (G) Final Shut-In 1039 Sampler —
 (H) Final Hydrostatic 1971 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Extra Recorder — Sub Total 0
 Day Standby — Total 1302.70
 Accessibility — MP/DST Disc't —
 Sub Total 1302.70

Approved By Tom Funk 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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48300

Well Name & No. Welch # 1-18 Test No. # 3 Date 9/7/12
 Company Mutual Drilling Company Inc. Elevation 29660 KB 2955 GL
 Address 250 N. Water Ste 300 Wichita KS 67202-1216
 Co. Rep / Geo. Tom Funk Rig Mutual # 21
 Location: Sec. 18 Twp. 16S Rge. 32W Co. Scott State KS

Interval Tested 4350 4395 Zone Tested Attamont
 Anchor Length 45 Drill Pipe Run 4081' Mud Wt. 9.3
 Top Packer Depth 4345 Drill Collars Run 266' Vis 52
 Bottom Packer Depth 4350 Wt. Pipe Run — WL 6.4
 Total Depth 4395 Chlorides 3800 ppm System LCM # 6

Blow Description Weak blow died in 8 min.
No return
No blow
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>2'</u>	<u>0cm</u>		<u>10</u>	<u>90</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

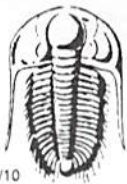
Rec Total 2' BHT 122° Gravity — API RW — @ —° F Chlorides — ppm

(A) Initial Hydrostatic 2204 Test 1250 T-On Location 18:00
 (B) First Initial Flow 24 Jars T-Started 19:00
 (C) First Final Flow 25 Safety Joint T-Open 20:45
 (D) Initial Shut-In 289 Circ Sub N/C T-Pulled 23:45
 (E) Second Initial Flow 25 Hourly Standby T-Out 01:50
 (F) Second Final Flow 26 Mileage 34RT 52.70 Comments —
 (G) Final Shut-In 137 Sampler —
 (H) Final Hydrostatic 2156 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Extra Recorder — Sub Total 0
 Day Standby — Total 1302.70
 Accessibility — MP/DST Disc't —

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

Approved By [Signature] Our Representative [Signature]
 Sub Total 1302.70

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. 50151

4/10

Well Name & No. Welch # 1-18 Test No. #24 Date 9/8/12
 Company Musker Drilling Co Inc. Elevation 2966 KB 2955 GL
 Address 250 W. Water St. 300 Wichita, KS 67202-1214
 Co. Rep / Geo. Tom Funk Rig Musker #21
 Location: Sec. 18 Twp. 16S Rge. 32W Co. Scott State KS

Interval Tested 4501 4560 Zone Tested Johnson
 Anchor Length 59 Drill Pipe Run 4238' Mud Wt. 9.2
 Top Packer Depth 4494 Drill Collars Run 2460' Vis SS
 Bottom Packer Depth 4501 Wt. Pipe Run ———— WL Le. 4
 Total Depth 4560 Chlorides 3600 ppm System LCM #6

Blow Description Weab blow died in 12 min
No return
No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1'</u>	<u>Mud (Heavy)</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

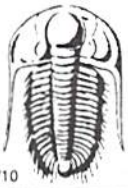
Rec Total 1' BHT 124° Gravity ———— API RW ———— @ ———— °F Chlorides ———— ppm

(A) Initial Hydrostatic 22660 Test 1250 T-On Location 16545
 (B) First Initial Flow 33 Jars ———— T-Started 17:20
 (C) First Final Flow 34 Safety Joint ———— T-Open 19:08
 (D) Initial Shut-In 67 Circ Sub N/C T-Pulled 22:08
 (E) Second Initial Flow 47 Hourly Standby ———— T-Out 00:26
 (F) Second Final Flow 35 Mileage 34 RT 52.70 Comments ————
 (G) Final Shut-In 64 Sampler ————
 (H) Final Hydrostatic 2187 Straddle ———— Ruined Shale Packer ————
 Shale Packer ———— Ruined Packer ————

Initial Open 30 Extra Packer ———— Extra Copies ————
 Initial Shut-In 60 Extra Recorder ———— Sub Total 0
 Final Flow 30 Day Standby ———— Total 1302.70
 Final Shut-In 60 Accessibility ———— MP/DST Disc't ————
 Sub Total 1302.70

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **50152**

Well Name & No. Welch # 1-18 Test No. #5 Date 9/9/12
 Company Murkin Drilling Co Inc. Elevation 2966 KB 2955 GL
 Address 250 N. Water Ste 300 Wichita, KS 67202-1216
 Co. Rep / Geo. Tom Funk Rig Murkin #21
 Location: Sec. 18 Twp. 16S Rge. 32W Co. Scott State Ks

Interval Tested 4560 4600 Zone Tested Basal Sand
 Anchor Length 40 Drill Pipe Run 4302' Mud Wt. 9.2
 Top Packer Depth 4555 Drill Collars Run 266 Vis 55
 Bottom Packer Depth 4560 Wt. Pipe Run — WL 6.1
 Total Depth 4600 Chlorides 3600 ppm System LCM #6

Blow Description B.O.B. in 5 min.
B.O.B. return in 12 min.

B.O.B. @ open
Bled off throughout shut-in.

Rec	Feet of	%gas	%oil	%water	%mud
<u>120'</u>	<u>C90</u>	<u>20</u>	<u>80</u>		
<u>900</u>	<u>C90 (Reversed out)</u>	<u>20</u>	<u>80</u>		
<u>120'</u>	<u>SMC 90 (under circ sub)</u>	<u>20</u>	<u>70</u>		<u>10</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>(1440' GAS IN PIPE)</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Rec Total <u>1140'</u>	BHT <u>127°</u>	Gravity <u>20</u>	API RW <u>—</u>	@ <u>—</u> °F	Chlorides <u>—</u> ppm

(A) Initial Hydrostatic 2323 Test 1250
 (B) First Initial Flow 41 Jars —
 (C) First Final Flow 121 Safety Joint —
 (D) Initial Shut-In 1132 Circ Sub —
 (E) Second Initial Flow 159 Hourly Standby —
 (F) Second Final Flow 191 Mileage 348 52.70
 (G) Final Shut-In — Sampler —
 (H) Final Hydrostatic 2217 Straddle —
 Shale Packer —
 Extra Packer —
 Extra Recorder —
 Day Standby —
 Accessibility —
 Sub Total 1302.70

T-On Location 07:05
 T-Started 07:30
 T-Open 09:40
 T-Pulled 12:40
 T-Out 16:15
 Comments —
 Ruined Shale Packer —
 Ruined Packer —
 Extra Copies —
 Sub Total 0
 Total 1302.70
 MP/DST Disc't —

Approved By Tom Funk

Our Representative [Signature]

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