



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita KS 67202

ATTN: Charles Schmaltz

Culwell 'E' #1-15

15-1s-37w Cheyenne KS

Start Date: 2015.01.26 @ 19:12:00

End Date: 2015.01.27 @ 03:29:09

Job Ticket #: 62571 DST #: 1

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

Printed: 2015.02.02 @ 14:32:33



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

15-1s-37w Cheyenne KS

250 N. Water STE 300
Wichita KS 67202

Culwell 'E' #1-15

Job Ticket: 62571

DST#: 1

ATTN: Charles Schmaltz

Test Start: 2015.01.26 @ 19:12:00

GENERAL INFORMATION:

Formation: **LKC " D "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:52:30

Time Test Ended: 03:29:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 78

Interval: 4100.00 ft (KB) To 4160.00 ft (KB) (TVD)

Reference Elevations: 3141.00 ft (KB)

Total Depth: 4160.00 ft (KB) (TVD)

3130.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6752

Inside

Press@RunDepth: 110.47 psig @ 4101.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.26

End Date:

2015.01.27

Last Calib.:

2015.01.27

Start Time: 19:12:01

End Time:

03:29:10

Time On Btm:

2015.01.26 @ 21:50:30

Time Off Btm:

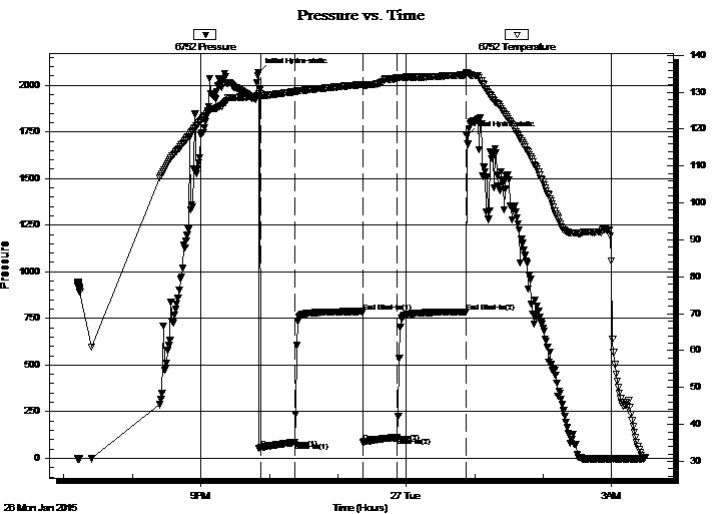
2015.01.27 @ 00:53:00

TEST COMMENT: 30 IF - 1/4" blow built to 1 1/2"

60 ISI - No return

30 FF - No blow

60 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2068.76	129.11	Initial Hydro-static
2	54.61	128.56	Open To Flow (1)
32	86.08	130.11	Shut-In(1)
92	784.50	132.06	End Shut-In(1)
92	87.19	131.89	Open To Flow (2)
122	110.47	133.83	Shut-In(2)
183	785.05	134.90	End Shut-In(2)
183	1729.13	135.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
190.00	Mud w/oil spots	0.98

Gas Rates

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



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DRILL STEM TEST REPORT

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250 N. Water STE 300
Wichita KS 67202

ATTN: Charles Schmaltz

15-1s-37w Cheyenne KS

Culwell 'E' #1-15

Job Ticket: 62571

DST#: 1

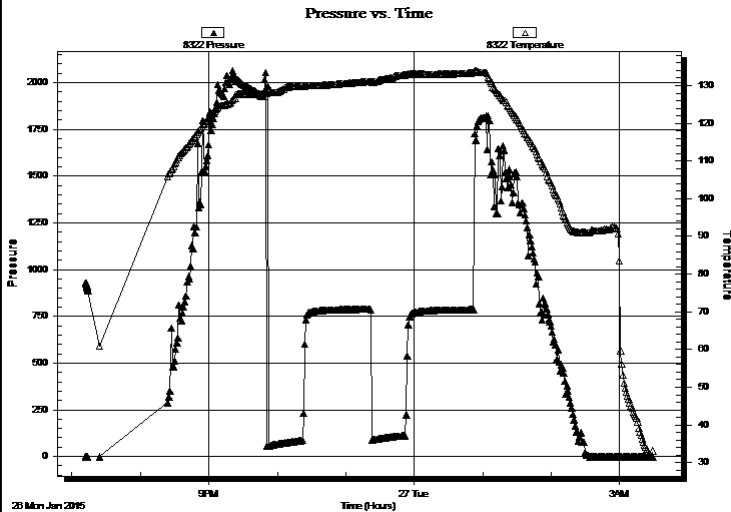
Test Start: 2015.01.26 @ 19:12:00

GENERAL INFORMATION:

Formation: **LKC " D "**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 21:52:30 Tester: Ryan Nichols
 Time Test Ended: 03:29:09 Unit No: 78
Interval: 4100.00 ft (KB) To 4160.00 ft (KB) (TVD)
 Total Depth: 4160.00 ft (KB) (TVD) Reference Elevations: 3141.00 ft (KB)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 3130.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 8322 Outside
 Press@RunDepth: psig @ 4101.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.01.26 End Date: 2015.01.27 Last Calib.: 2015.01.27
 Start Time: 19:12:01 End Time: 03:29:10 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 IF - 1/4" blow built to 1 1/2"
 60 ISI - No return
 30 FF - No blow
 60 FSI - No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
190.00	Mud w/oil spots	0.98

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

15-1s-37w Cheyenne KS

250 N. Water STE 300
Wichita KS 67202

Culwell 'E' #1-15

Job Ticket: 62571

DST#: 1

ATTN: Charles Schmaltz

Test Start: 2015.01.26 @ 19:12:00

Tool Information

Drill Pipe:	Length: 3924.00 ft	Diameter: 3.80 inches	Volume: 55.04 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 55.95 bbl</u>	Tool Chased 10.00 ft
Drill Pipe Above KB:	36.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4100.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	87.00 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			4074.00	
Shut In Tool	5.00			4079.00	
Hydraulic tool	5.00			4084.00	
Jars	5.00			4089.00	
Safety Joint	2.00			4091.00	
Packer	5.00			4096.00	27.00 Bottom Of Top Packer
Packer	4.00			4100.00	
Stubb	1.00			4101.00	
Recorder	0.00	6752	Inside	4101.00	
Recorder	0.00	8322	Outside	4101.00	
Perforations	23.00			4124.00	
Change Over Sub	1.00			4125.00	
Drill Pipe	31.00			4156.00	
Change Over Sub	1.00			4157.00	
Bullnose	3.00			4160.00	60.00 Bottom Packers & Anchor

Total Tool Length: 87.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

15-1s-37w Cheyenne KS

250 N. Water STE 300
Wichita KS 67202

Culwell 'E' #1-15

Job Ticket: 62571

DST#: 1

ATTN: Charles Schmaltz

Test Start: 2015.01.26 @ 19:12:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
190.00	Mud w /oil spots	0.980

Total Length: 190.00 ft

Total Volume: bbl

Num Fluid Samples: 0

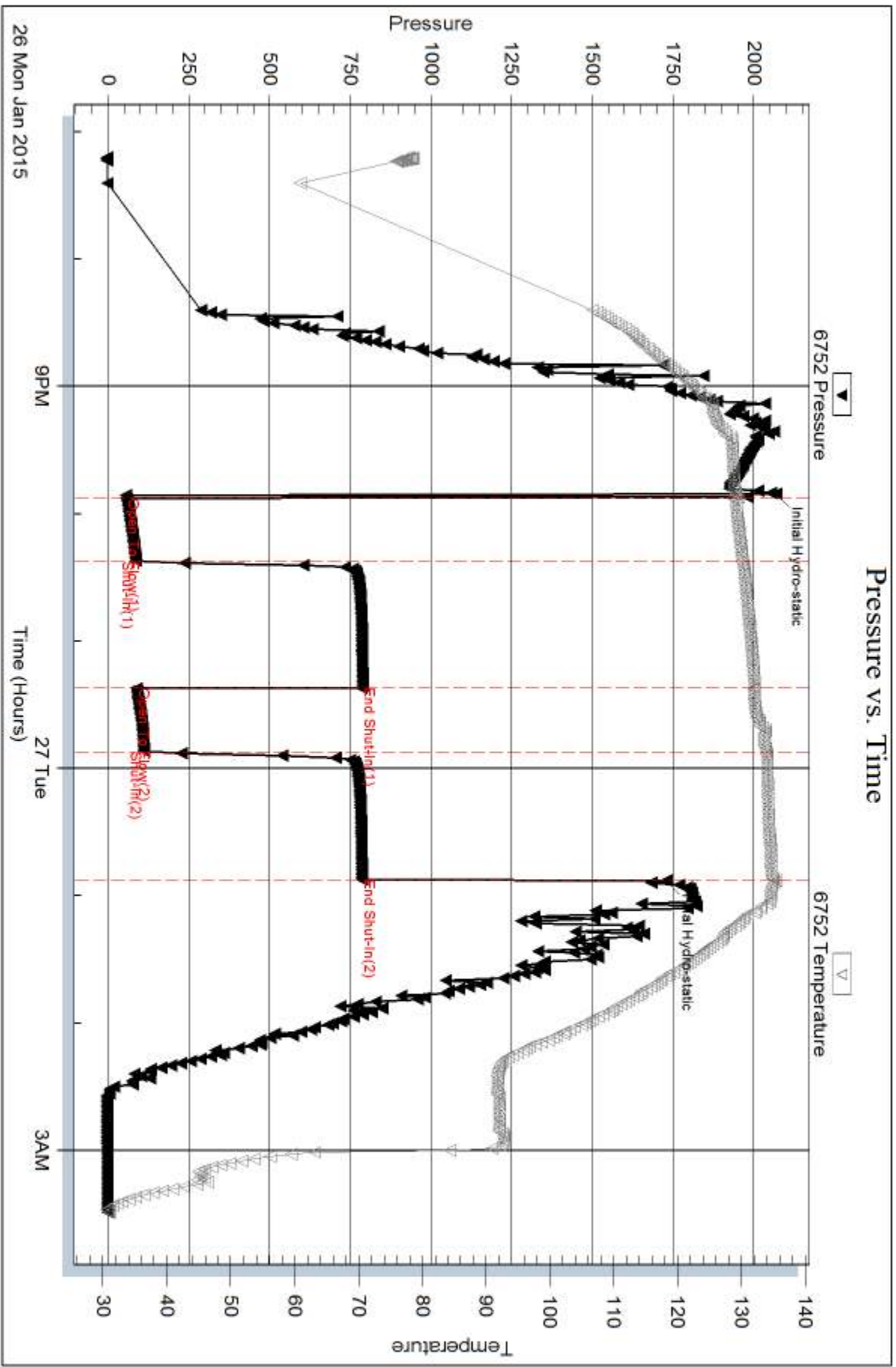
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

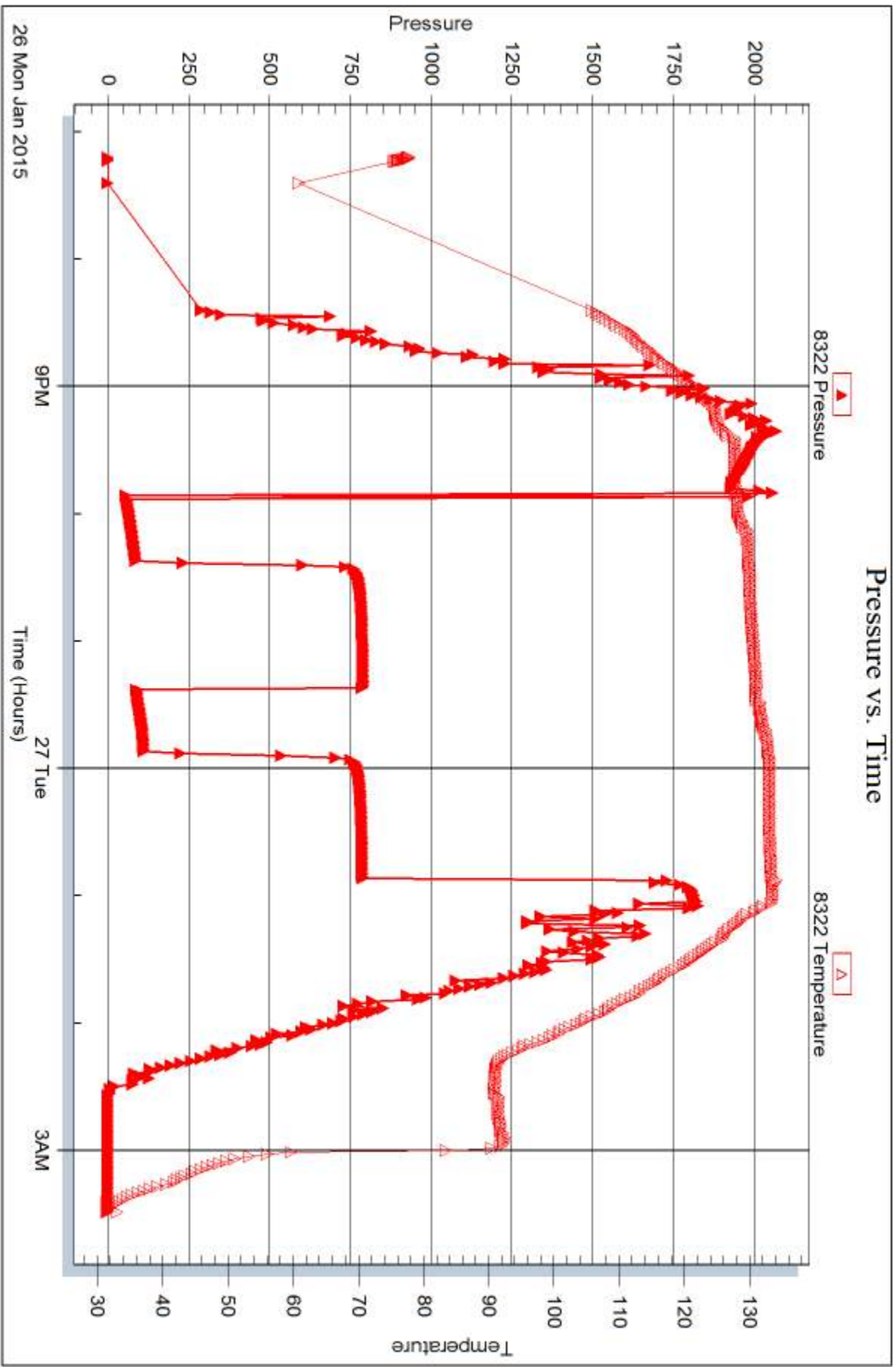


Serial #: 8322

Outside Murfin Drilling Co. Inc.

Oilwell #1-15

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 62571

Printed: 2015.02.02 @ 14:32:36



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita KS 67202

ATTN: Charles Schmaltz

Culwell 'E' #1-15

15-1s-37w Cheyenne KS

Start Date: 2015.01.28 @ 01:48:00

End Date: 2015.01.28 @ 10:26:30

Job Ticket #: 62572 DST #: 2

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

Printed: 2015.02.02 @ 14:32:01



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

15-1s-37w Cheyenne KS

250 N. Water STE 300
Wichita KS 67202

Culwell 'E' #1-15

Job Ticket: 62572

DST#: 2

ATTN: Charles Schmaltz

Test Start: 2015.01.28 @ 01:48:00

GENERAL INFORMATION:

Formation: **LKC " G - J "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:25:20

Time Test Ended: 10:26:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 78

Interval: 4155.00 ft (KB) To 4305.00 ft (KB) (TVD)

Reference Elevations: 3141.00 ft (KB)

Total Depth: 4305.00 ft (KB) (TVD)

3130.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6752

Inside

Press@RunDepth: 118.22 psig @ 4156.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.28

End Date: 2015.01.28

Last Calib.: 2015.01.28

Start Time: 01:48:01

End Time: 10:26:30

Time On Btm: 2015.01.28 @ 04:25:10

Time Off Btm: 2015.01.28 @ 08:27:09

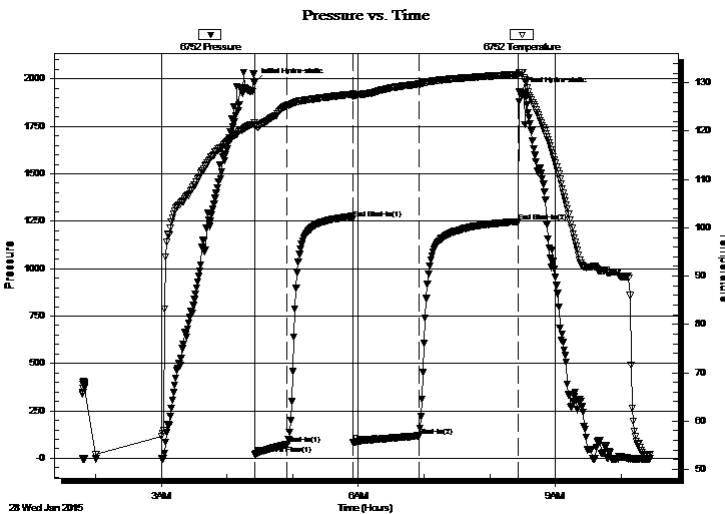
TEST COMMENT: 30 IF - 1" blow built to 7"

60 ISI - Surface blow started @ 5 mins died @ 15 mins

60 FF - Surface blow started @ 2 mins built to BoB @ 36 mins

90 FSI - Surface blow built to 1/4" @ 12 mins died @ 27 mins

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1980.11	121.73	Initial Hydro-static
1	20.60	121.00	Open To Flow (1)
29	71.89	125.18	Shut-In(1)
90	1263.72	127.65	End Shut-In(1)
90	84.32	127.17	Open To Flow (2)
150	118.22	129.71	Shut-In(2)
241	1248.02	131.77	End Shut-In(2)
242	1931.09	132.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	GMCO - 20%G - 35%M - 45%o	0.61
62.00	GOCM - 10%G - 45%o - 45%M	0.31
63.00	OCM - 40%o - 60%M	0.88
0.00	189' GIP	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 Co. Inc.

250 N. Water STE 300
Wichita KS 67202

ATTN: Charles Schmaltz

15-1s-37w Cheyenne KS

Culwell 'E' #1-15

Job Ticket: 62572

DST#: 2

Test Start: 2015.01.28 @ 01:48:00

GENERAL INFORMATION:

Formation: **LKC " G - J "**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:25:20
 Time Test Ended: 10:26:30
 Interval: **4155.00 ft (KB) To 4305.00 ft (KB) (TVD)**
 Total Depth: 4305.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ryan Nichols
 Unit No: 78
 Reference Elevations: 3141.00 ft (KB)
 3130.00 ft (CF)
 KB to GR/CF: 11.00 ft

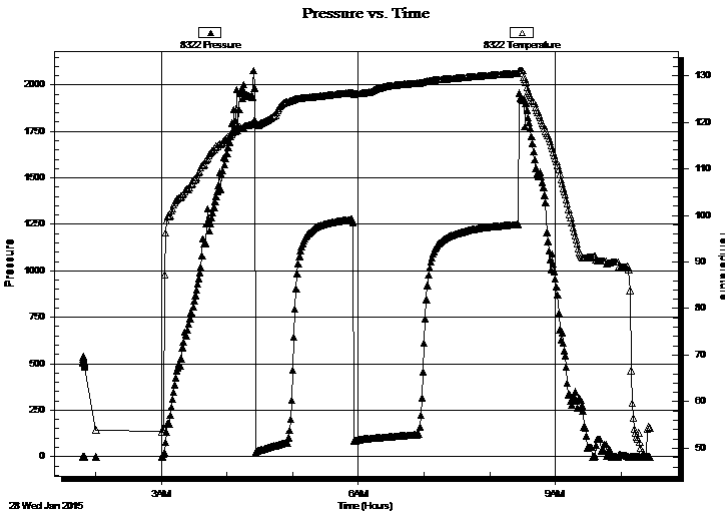
Serial #: 8322

Outside

Press@RunDepth: psig @ 4156.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.01.28 End Date: 2015.01.28 Last Calib.: 2015.01.28
 Start Time: 01:48:01 End Time: 10:26:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 IF - 1" blow built to 7"
 60 ISI - Surface blow started @ 5 mins died @ 15 mins
 60 FF - Surface blow started @ 2 mins built to BoB @ 36 mins
 90 FSI - Surface blow built to 1/4" @ 12 mins died @ 27 mins

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
124.00	GMCO - 20%G - 35%M - 45%o	0.61
62.00	GOCM - 10%G - 45%o - 45%M	0.31
63.00	OCM - 40%o - 60%M	0.88
0.00	189' GIP	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.

15-1s-37w Cheyenne KS

250 N. Water STE 300
Wichita KS 67202

Culwell 'E' #1-15

Job Ticket: 62572

DST#: 2

ATTN: Charles Schmaltz

Test Start: 2015.01.28 @ 01:48:00

Tool Information

Drill Pipe:	Length: 3953.00 ft	Diameter: 3.80 inches	Volume: 55.45 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 56.36 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4155.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	150.00 ft			
Tool Length:	177.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4129.00	
Shut In Tool	5.00			4134.00	
Hydraulic tool	5.00			4139.00	
Jars	5.00			4144.00	
Safety Joint	2.00			4146.00	
Packer	5.00			4151.00	27.00 Bottom Of Top Packer
Packer	4.00			4155.00	
Stubb	1.00			4156.00	
Recorder	0.00	6752	Inside	4156.00	
Recorder	0.00	8322	Outside	4156.00	
Perforations	17.00			4173.00	
Change Over Sub	1.00			4174.00	
Drill Pipe	127.00			4301.00	
Change Over Sub	1.00			4302.00	
Bullnose	3.00			4305.00	150.00 Bottom Packers & Anchor

Total Tool Length: 177.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

15-1s-37w Cheyenne KS

250 N. Water STE 300
Wichita KS 67202

Culwell 'E' #1-15

Job Ticket: 62572

DST#: 2

ATTN: Charles Schmaltz

Test Start: 2015.01.28 @ 01:48:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
124.00	GMCO - 20%G - 35%M - 45%o	0.610
62.00	GOCM - 10%G - 45%o - 45%M	0.314
63.00	OCM - 40%o - 60%M	0.884
0.00	189' GIP	0.000

Total Length: 249.00 ft

Total Volume: 1.808 bbl

Num Fluid Samples: 0

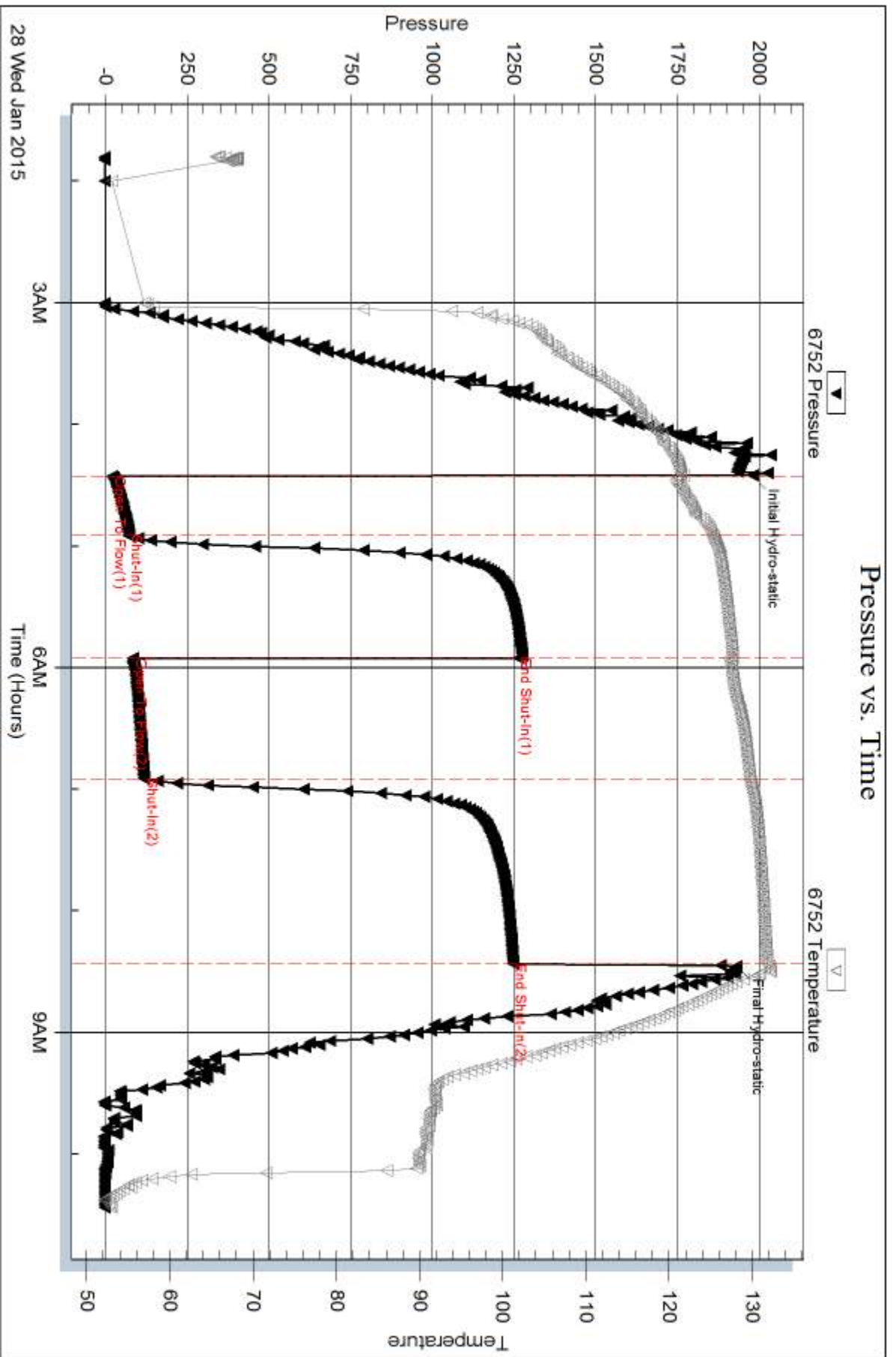
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

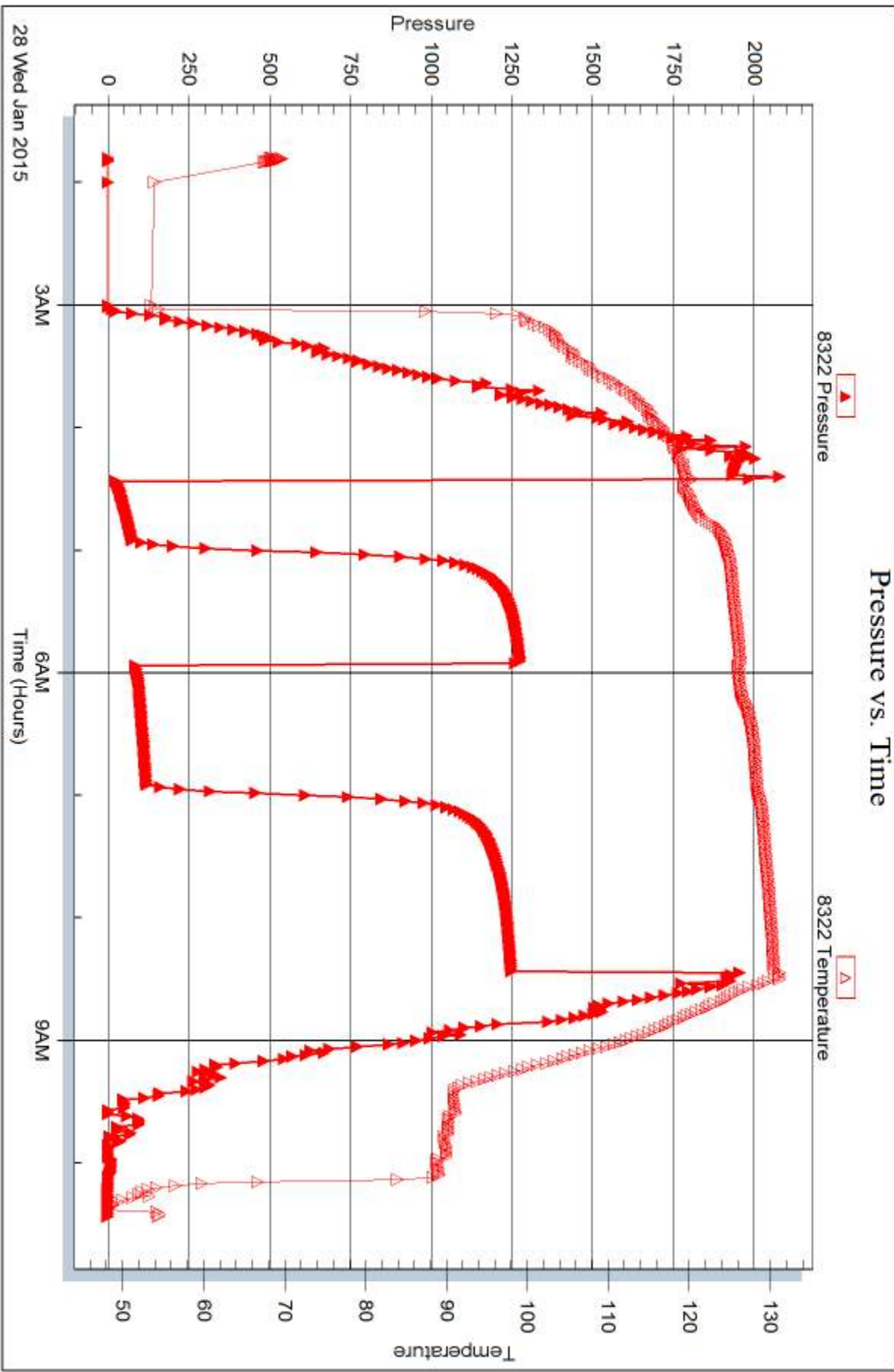


Serial #: 8322

Outside Murfin Drilling Co. Inc.

Oilwell #1-15

DST Test Number: 2





DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita KS 67202

ATTN: Charles Schmaltz

Culwell 'E' #1-15

15-1s-37w Cheyenne KS

Start Date: 2015.01.29 @ 05:47:00

End Date: 2015.01.29 @ 13:37:09

Job Ticket #: 62573 DST #: 3

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

Printed: 2015.02.02 @ 14:31:07

Murfin Drilling Co. Inc.

15-1s-37w Cheyenne KS

Culwell 'E' #1-15

DST # 3

Pawnee

2015.01.29



**TRILOBITE
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DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

15-1s-37w Cheyenne KS

250 N. Water STE 300
Wichita KS 67202

Culwell 'E' #1-15

Job Ticket: 62573

DST#: 3

ATTN: Charles Schmaltz

Test Start: 2015.01.29 @ 05:47:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:25:00

Time Test Ended: 13:37:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 78

Interval: 4452.00 ft (KB) To 4495.00 ft (KB) (TVD)

Reference Elevations: 3141.00 ft (KB)

Total Depth: 4495.00 ft (KB) (TVD)

3130.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6752 Inside

Press@RunDepth: 47.84 psig @ 4453.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.29

End Date:

2015.01.29

Last Calib.:

2015.01.29

Start Time: 05:47:01

End Time:

13:37:10

Time On Btm:

2015.01.29 @ 08:24:50

Time Off Btm:

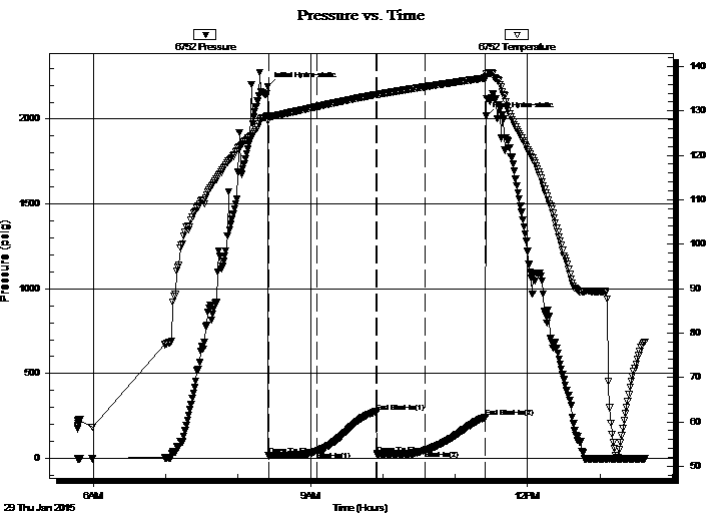
2015.01.29 @ 11:25:30

TEST COMMENT: 30 IF - Surface blow built to 3/4"

60 ISI - No return

30 FF - No blow

60 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2194.10	128.82	Initial Hydro-static
1	15.93	127.74	Open To Flow (1)
41	42.26	130.93	Shut-In(1)
90	271.49	133.67	End Shut-In(1)
91	23.93	133.64	Open To Flow (2)
131	47.84	135.43	Shut-In(2)
181	243.25	137.41	End Shut-In(2)
181	2016.93	137.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM - 30%o - 70%M	0.05

* 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.

15-1s-37w Cheyenne KS

250 N. Water STE 300
Wichita KS 67202

Culwell 'E' #1-15

Job Ticket: 62573

DST#: 3

ATTN: Charles Schmaltz

Test Start: 2015.01.29 @ 05:47:00

Tool Information

Drill Pipe:	Length: 4267.00 ft	Diameter: 3.80 inches	Volume: 59.85 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4452.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	43.00 ft			
Tool Length:	70.00 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			4426.00	
Shut In Tool	5.00			4431.00	
Hydraulic tool	5.00			4436.00	
Jars	5.00			4441.00	
Safety Joint	2.00			4443.00	
Packer	5.00			4448.00	27.00 Bottom Of Top Packer
Packer	4.00			4452.00	
Stubb	1.00			4453.00	
Recorder	0.00	6752	Inside	4453.00	
Recorder	0.00	8322	Outside	4453.00	
Perforations	6.00			4459.00	
Change Over Sub	1.00			4460.00	
Drill Pipe	31.00			4491.00	
Change Over Sub	1.00			4492.00	
Bullnose	3.00			4495.00	43.00 Bottom Packers & Anchor

Total Tool Length: 70.00



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FLUID SUMMARY

Murfin Drilling Co. Inc.

15-1s-37w Cheyenne KS

250 N. Water STE 300
Wichita KS 67202

Culwell 'E' #1-15

Job Ticket: 62573

DST#: 3

ATTN: Charles Schmaltz

Test Start: 2015.01.29 @ 05:47:00

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: 80.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM - 30%o - 70%M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

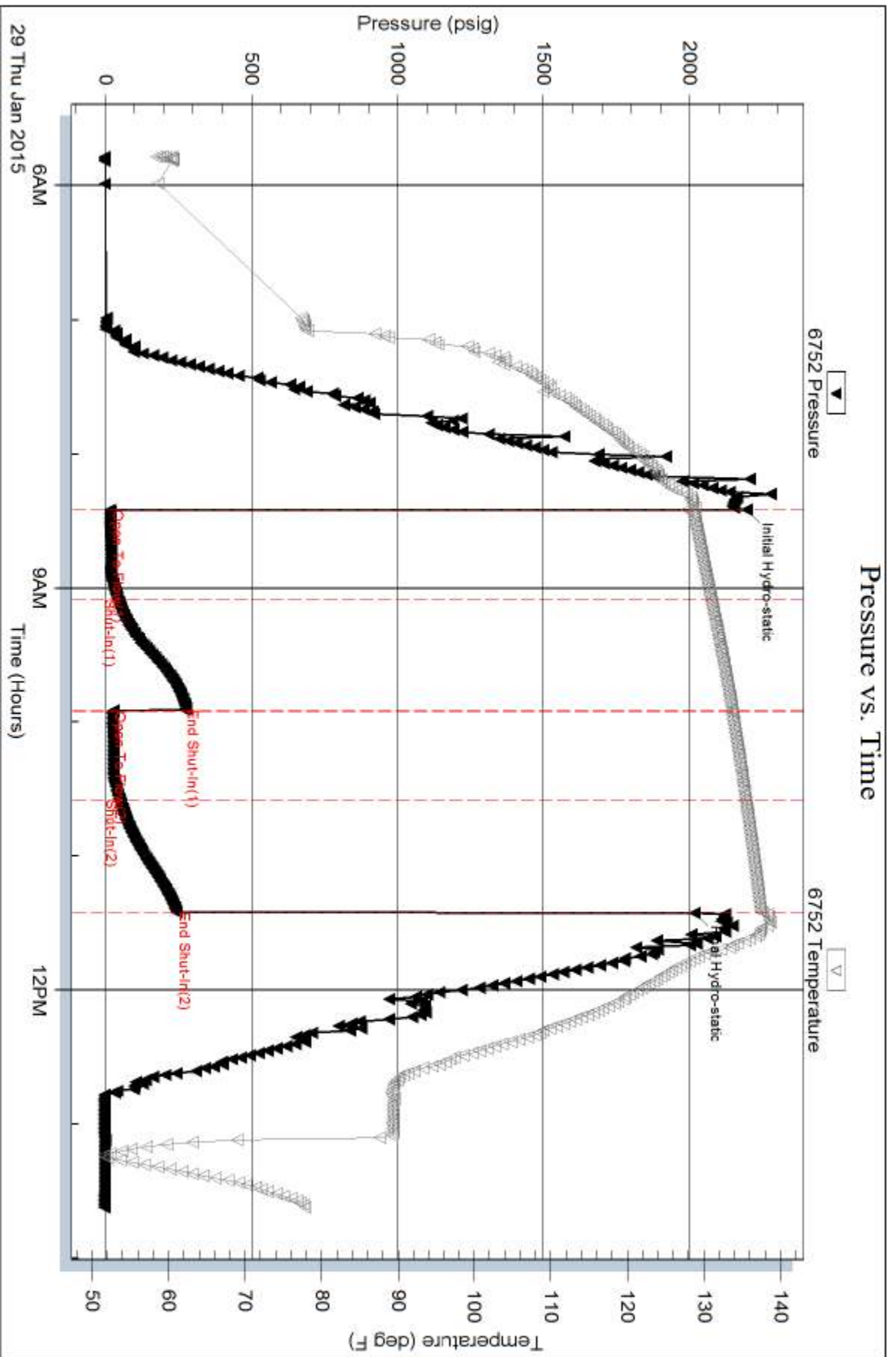
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

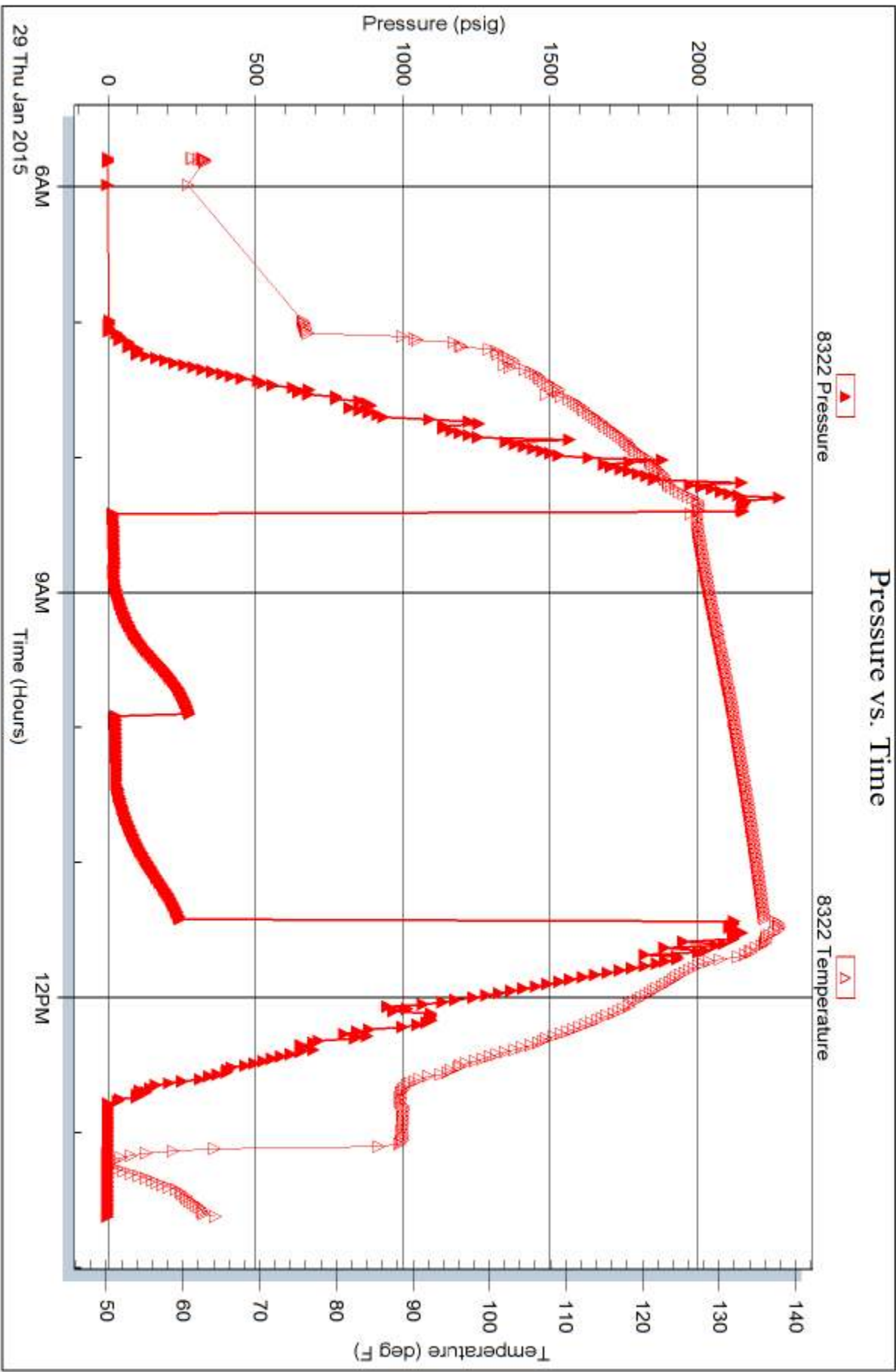


Serial #: 8322

Outside Murfin Drilling Co. Inc.

Oilwell #1-15

DST Test Number: 3





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62571

Well Name & No. Culwell 'E' #1-15 Test No. 1 Date 1/26/15
 Company Murfin Drilling Co. Inc. Elevation 31401 KB 3130 GL
 Address 250 N. Water STE 300 Wichita KS 67203
 Co. Rep / Geo. Charles Schmaltz Rig Murfin #20
 Location: Sec. 15 Twp. 15 Rge. 37W Co. Cheyenne State KS

Interval Tested 4100 - 4160 Zone Tested 2KC "D"
 Anchor Length 60 Drill Pipe Run 3924' Mud Wt. 9.3
 Top Packer Depth 4095 Drill Collars Run 185' Vis 56
 Bottom Packer Depth 4100 Wt. Pipe Run 0' WL 7.2
 Total Depth 4160 Chlorides 500 ppm System LCM 6
 Blow Description IF - 1/4" blow built to 1 1/2"
ISI - No return
FI - No blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>190'</u>	<u>Mud w/oil spots</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 Total 190' BHT 135° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2069 Test 1150 T-On Location 18:30
 (B) First Initial Flow 55 Jars 250 T-Started 19:10
 (C) First Final Flow 86 Safety Joint 75 T-Open 21:53
 (D) Initial Shut-In 785 Circ Sub NC T-Pulled 00:53
 (E) Second Initial Flow 87 Hourly Standby — T-Out 03:29
 (F) Second Final Flow 110 Mileage 134 RT 134 Comments opened going through a bridge 10' off bottom
 (G) Final Shut-In 785 Sampler —
 (H) Final Hydrostatic 1729 Straddle —
 Shale Packer —
 Shale Packer —
 Extra Packer —
 Extra Recorder —
 Day Standby —
 Accessibility —
 Sub Total 1609

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

Sub Total 1609

Approved By _____ 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. 62572

Well Name & No. Culwell 'E' #1-15 Test No. 2 Date 1/28/15
 Company Martin Drilling Co. Inc. Elevation 3141 KB 3130 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Charles Schmalz Rig Martin # 20
 Location: Sec. 15 Twp. 15 Rge. 37 W Co. Cheyenne State KS

Interval Tested 4155 - 4305 Zone Tested 2KC "G-J"
 Anchor Length 150' Drill Pipe Run 3953' Mud Wt. 9.8
 Top Packer Depth 4150 Drill Collars Run 185' Vis 60
 Bottom Packer Depth 4155 Wt. Pipe Run 0' WL 6.8
 Total Depth 4305 Chlorides 1000 ppm System LCM 8

Blow Description IF - 1" blow built to 7"
ISI - Surface blow started @ 5 mins died @ 15 mins
FF - Surface blow started @ 2 mins built to BoB @ 36 mins
FSL - Surface blow built to 1/4" @ 12 mins died @ 27 mins

Rec	Feet of	%gas	%oil	%water	%mud
<u>23</u>	<u>OCM</u>	<u>40</u>		<u>60</u>	
<u>62</u>	<u>GOCM</u>	<u>10</u>	<u>45</u>	<u>45</u>	
<u>124</u>	<u>GMCO</u>	<u>20</u>	<u>45</u>	<u>35</u>	

Rec Total 249' BHT 132° Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic 1980 Test 1150 T-On Location 01:30
 (B) First Initial Flow 21 Jars 250 T-Started 01:48
 (C) First Final Flow 72 Safety Joint 75 T-Open 04:26
 (D) Initial Shut-In 1264 Circ Sub NC T-Pulled 08:26
 (E) Second Initial Flow 84 Hourly Standby _____ T-Out 10:26
 (F) Second Final Flow 118 Mileage 134 RT 134 Comments ~~189' GI~~
 (G) Final Shut-In 1248 Sampler _____ 189' GI
 (H) Final Hydrostatic 1931 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

Sub Total 1609
 Total 1609
 MP/DST Disc't _____

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62573

Well Name & No. Culwell 'E' #1-15 Test No. 3 Date 1/29/15
 Company Murfin Drilling Co. Inc. Elevation 3141 KB 3130 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Charles Schmalz Rig Murfin #20
 Location: Sec. 15 Twp. 15 Rge. 37W Co. Cheyenne State KS

Interval Tested 4452 - 4495 Zone Tested Pawnee
 Anchor Length 43' Drill Pipe Run 4267' Mud Wt. 9.2
 Top Packer Depth 4447 Drill Collars Run 185' Vis 80
 Bottom Packer Depth 4452 Wt. Pipe Run 0' WL 6.0
 Total Depth 4495 Chlorides 1000 ppm System LCM 10
 Blow Description IF - Surface blow built to 3/4"
ISI - No return
FF - No blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>OCM</u>		<u>30</u>	<u>70</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 1370 Gravity — API RW — @ — F Chlorides — ppm

(A) Initial Hydrostatic <u>2194</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>05:30</u>
(B) First Initial Flow <u>16</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>05:47</u>
(C) First Final Flow <u>42</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>08:25</u>
(D) Initial Shut-In <u>271</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>11:25</u>
(E) Second Initial Flow <u>24</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>13:37</u>
(F) Second Final Flow <u>48</u>	<input checked="" type="checkbox"/> Mileage <u>134 RT</u> 134	Comments
(G) Final Shut-In <u>243</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2017</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1609</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1609</u>	

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