



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Saman Sharifaie

Virginia 'C' #1-14

14-1s-36w Rawlins KS

Start Date: 2014.07.23 @ 12:20:00

End Date: 2014.07.23 @ 21:20:45

Job Ticket #: 56947 DST #: 1

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

Printed: 2014.07.25 @ 08:28:39



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-36w Rawlins KS

250 N. Water STE 300
Wichita, KS 67202

Virginia 'C' #1-14

Job Ticket: 56947

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2014.07.23 @ 12:20:00

GENERAL INFORMATION:

Formation: **LKC "D - G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:34:45

Time Test Ended: 21:20:45

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 57

Interval: 4258.00 ft (KB) To 4370.00 ft (KB) (TVD)

Reference Elevations: 3299.00 ft (KB)

Total Depth: 4370.00 ft (KB) (TVD)

3288.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8671

Inside

Press@RunDepth: 555.08 psig @ 4259.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.23

End Date:

2014.07.23

Last Calib.:

2014.07.23

Start Time: 12:20:05

End Time:

21:20:45

Time On Btm:

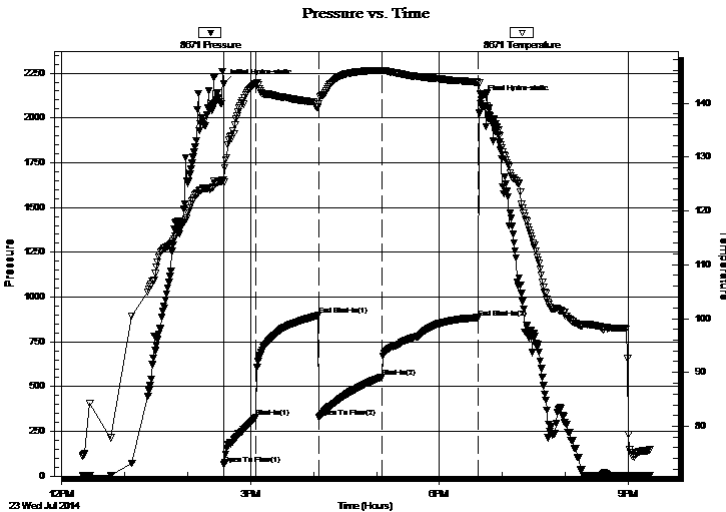
2014.07.23 @ 14:34:30

Time Off Btm:

2014.07.23 @ 18:39:30

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 5 min.
60 - IS: No blow back
60 - FF: Blow built to BOB at 9 min.
90 - FS: Blow back built to 1/2"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2189.91	125.85	Initial Hydro-static
1	66.11	125.31	Open To Flow (1)
31	329.22	143.70	Shut-In(1)
91	897.72	139.23	End Shut-In(1)
91	330.10	139.86	Open To Flow (2)
151	555.08	146.04	Shut-In(2)
243	884.82	143.86	End Shut-In(2)
245	2102.24	141.56	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
635.00	MCW w/trace oil 91%w, 9%m	7.01
125.00	SO/MCW 71%w, 22%m, 4%g, 3%o	1.75
400.00	OCGWM 48%m, 32%w, 12%g, 8%o	5.61
20.00	SMWCO 85%o, 5%m, 5%w, 5%g	0.28

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

14-1s-36w Rawlins KS

250 N. Water STE 300
Wichita, KS 67202

Virginia 'C' #1-14

Job Ticket: 56947

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2014.07.23 @ 12:20:00

Tool Information

Drill Pipe:	Length: 4040.00 ft	Diameter: 3.80 inches	Volume: 56.67 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: 208.00 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 57.69 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 85000.00 lb
Depth to Top Packer:	4258.00 ft			Final 92000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	112.00 ft			
Tool Length:	140.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4235.00	
Hydraulic tool	5.00			4240.00	
Jars	5.00			4245.00	
Safety Joint	3.00			4248.00	
Packer	5.00			4253.00	28.00 Bottom Of Top Packer
Packer	5.00			4258.00	
Stubb	1.00			4259.00	
Recorder	0.00	8671	Inside	4259.00	
Recorder	0.00	8320	Outside	4259.00	
Perforations	12.00			4271.00	
Blank Spacing	96.00			4367.00	
Bullnose	3.00			4370.00	112.00 Bottom Packers & Anchor

Total Tool Length: 140.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

14-1s-36w Rawlins KS

250 N. Water STE 300
Wichita, KS 67202

Virginia 'C' #1-14

Job Ticket: 56947

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2014.07.23 @ 12:20:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 10.00 lb/gal
Viscosity: 55.00 sec/qt
Water Loss: 8.38 in³
Resistivity: ohm.m
Salinity: 600.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 23.8 deg API
Water Salinity: 13000 ppm

Recovery Information

Recovery Table

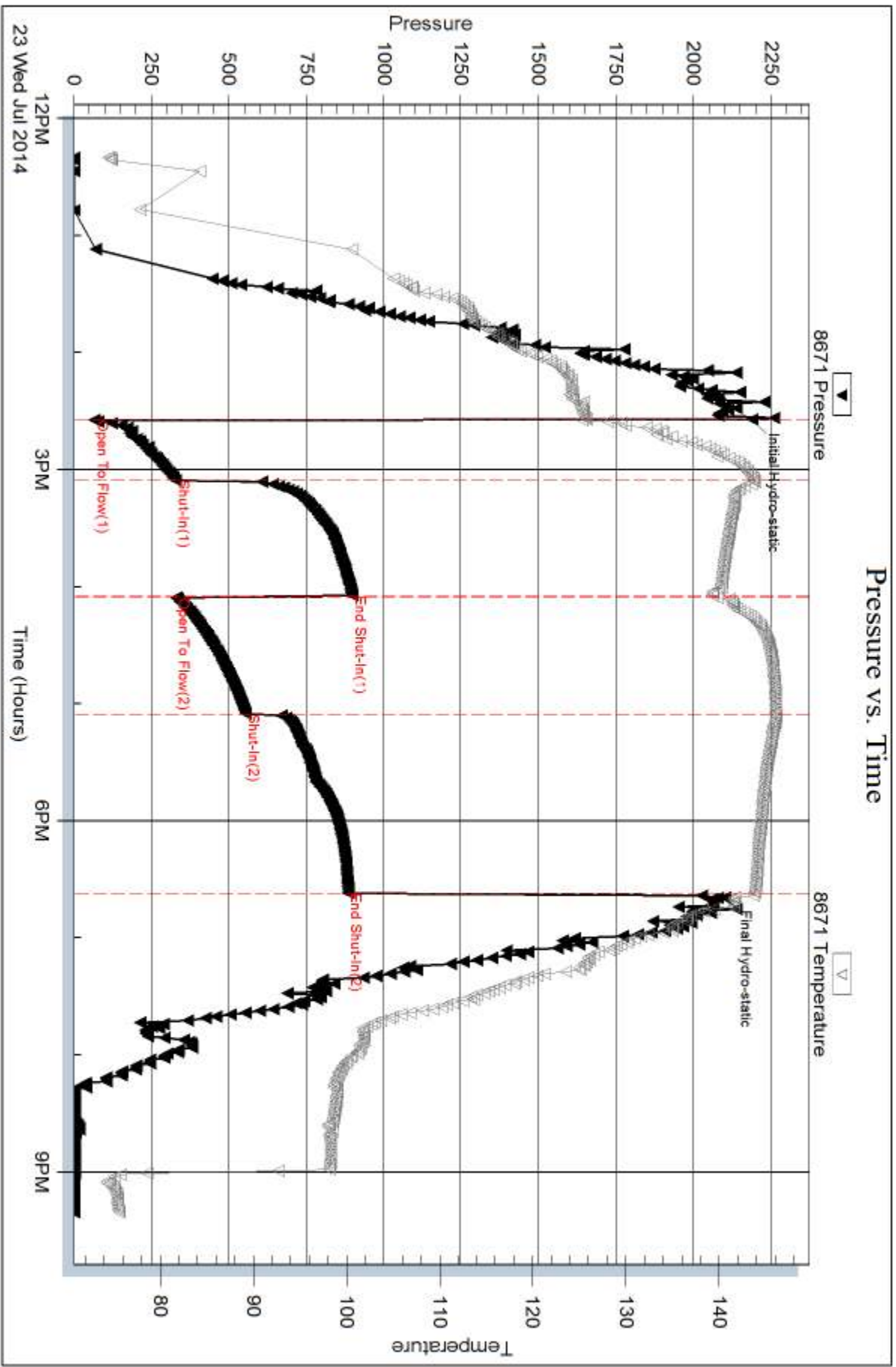
Length ft	Description	Volume bbl
635.00	MCW w /trace oil 91%w , 9%m	7.013
125.00	SO/MCW 71%w , 22%m, 4%g, 3%o	1.753
400.00	OCGWM 48%m, 32%w , 12%g, 8%o	5.611
20.00	SMWCO 85%o, 5%m, 5%w , 5%g	0.281

Total Length: 1180.00 ft Total Volume: 14.658 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: Gravity = 25.6 api @ 78 deg F
RW = .463 ohms @ 75.3 deg F

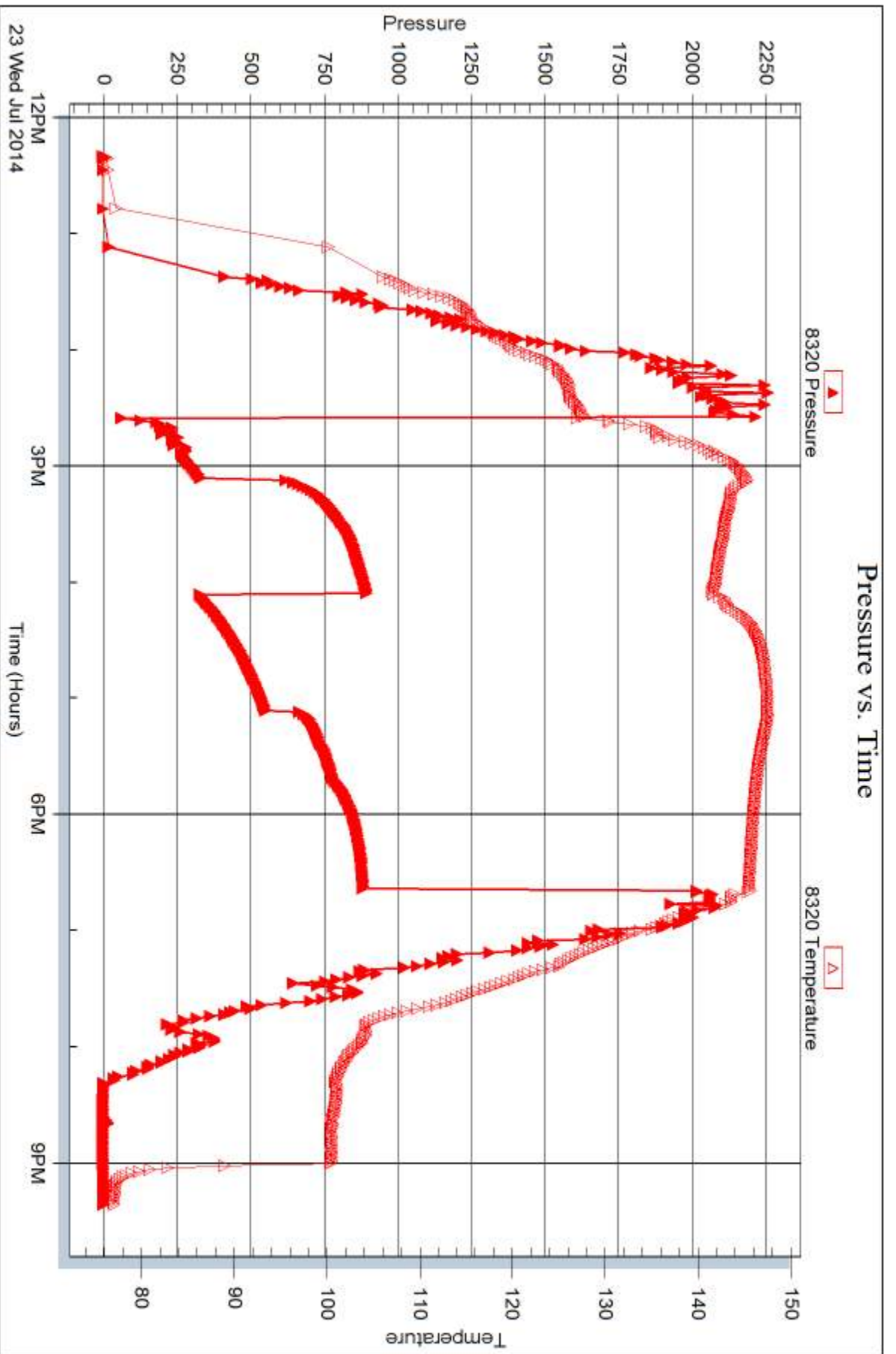


Serial #: 8320

Outside Murfin Drilling Co., Inc.

Virginia 'C' #1-14

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 56947

Printed: 2014.07.25 @ 08:28:40



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Saman Sharifaie

Virginia 'C' #1-14

14-1s-36w Rawlins KS

Start Date: 2014.07.24 @ 08:20:00

End Date: 2014.07.24 @ 16:42:30

Job Ticket #: 56948 DST #: 2

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

Printed: 2014.07.25 @ 08:22:51



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-36w Rawlins KS

250 N. Water STE 300
Wichita, KS 67202

Virginia 'C' #1-14

Job Ticket: 56948

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2014.07.24 @ 08:20:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:26:15

Time Test Ended: 16:42:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 57

Interval: 4374.00 ft (KB) To 4460.00 ft (KB) (TVD)

Reference Elevations: 3299.00 ft (KB)

Total Depth: 4460.00 ft (KB) (TVD)

3288.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8671

Inside

Press@RunDepth: 137.73 psig @ 4375.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.24

End Date:

2014.07.24

Last Calib.:

2014.07.24

Start Time: 08:20:05

End Time:

16:42:29

Time On Btm:

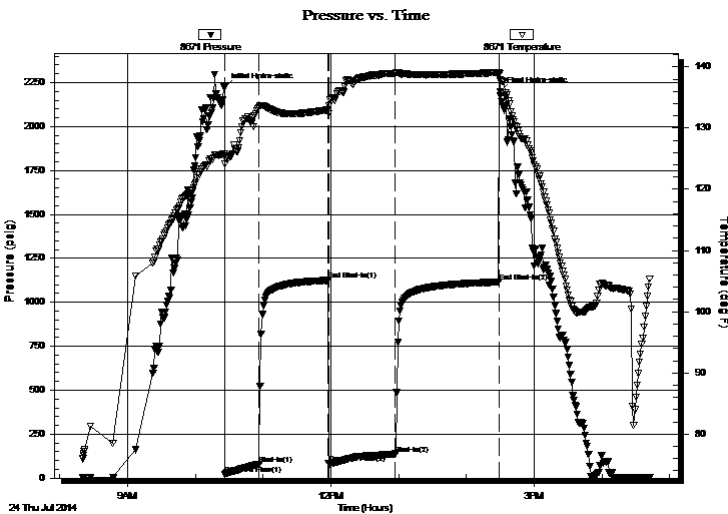
2014.07.24 @ 10:26:00

Time Off Btm:

2014.07.24 @ 14:29:45

TEST COMMENT: 30 - IF: Blow built to 3 1/2"
60 - IS: No blow back
60 - FF: Blow started at 9 1/2 min., built to 5"
90 - FS: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2220.57	125.33	Initial Hydro-static
1	22.36	124.19	Open To Flow (1)
31	78.74	133.37	Shut-In(1)
92	1125.09	132.98	End Shut-In(1)
92	82.81	132.41	Open To Flow (2)
151	137.73	138.89	Shut-In(2)
243	1115.33	139.09	End Shut-In(2)
244	2197.71	137.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
119.00	WM w/trace oil 56%m, 44%w	0.59
119.00	Mud w/trace oil 100%m	0.86
12.00	SOCM 98%m, 2%o	0.17

* 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: Saman Sharifaie

14-1s-36w Rawlins KS

Virginia 'C' #1-14

Job Ticket: 56948 **DST#: 2**

Test Start: 2014.07.24 @ 08:20:00

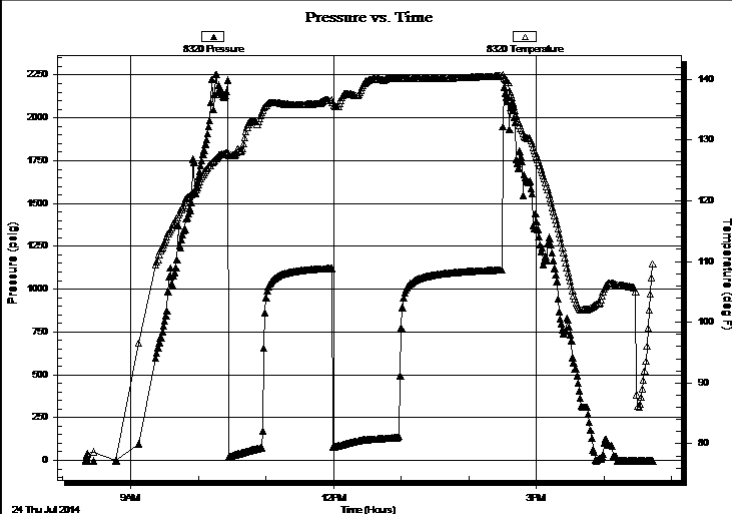
GENERAL INFORMATION:

Formation: **LKC "H - J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:26:15
 Time Test Ended: 16:42:30
 Interval: **4374.00 ft (KB) To 4460.00 ft (KB) (TVD)**
 Total Depth: 4460.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 57
 Reference Elevations: 3299.00 ft (KB)
 3288.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 8320 Outside

Press@RunDepth: psig @ 4375.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.07.24 End Date: 2014.07.24 Last Calib.: 2014.07.24
 Start Time: 08:20:05 End Time: 16:43:14 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to 3 1/2"
 60 - ISI: No blow back
 60 - FF: Blow started at 9 1/2 min., built to 5"
 90 - FSI: No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
119.00	WM w/trace oil 56%m, 44%w	0.59
119.00	Mud w/trace oil 100%m	0.86
12.00	SOCM 98%m, 2%o	0.17

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.

14-1s-36w Rawlins KS

250 N. Water STE 300
Wichita, KS 67202

Virginia 'C' #1-14

Job Ticket: 56948

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2014.07.24 @ 08:20:00

Tool Information

Drill Pipe:	Length: 4165.00 ft	Diameter: 3.80 inches	Volume: 58.42 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: 208.00 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose: 92000.00 lb
			<u>Total Volume: 59.44 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 90000.00 lb
Depth to Top Packer:	4374.00 ft			Final 90000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	86.00 ft			
Tool Length:	114.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			4351.00	
Hydraulic tool	5.00			4356.00	
Jars	5.00			4361.00	
Safety Joint	3.00			4364.00	
Packer	5.00			4369.00	28.00 Bottom Of Top Packer
Packer	5.00			4374.00	
Stubb	1.00			4375.00	
Recorder	0.00	8671	Inside	4375.00	
Recorder	0.00	8320	Outside	4375.00	
Perforations	17.00			4392.00	
Blank Spacing	65.00			4457.00	
Bullnose	3.00			4460.00	86.00 Bottom Packers & Anchor

Total Tool Length: 114.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

14-1s-36w Rawlins KS

250 N. Water STE 300
Wichita, KS 67202

Virginia 'C' #1-14

Job Ticket: 56948

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2014.07.24 @ 08:20:00

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:

12000 ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
119.00	WM w /trace oil 56%m, 44%w	0.585
119.00	Mud w /trace oil 100%m	0.859
12.00	SOCM 98%m, 2%o	0.168

Total Length: 250.00 ft Total Volume: 1.612 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

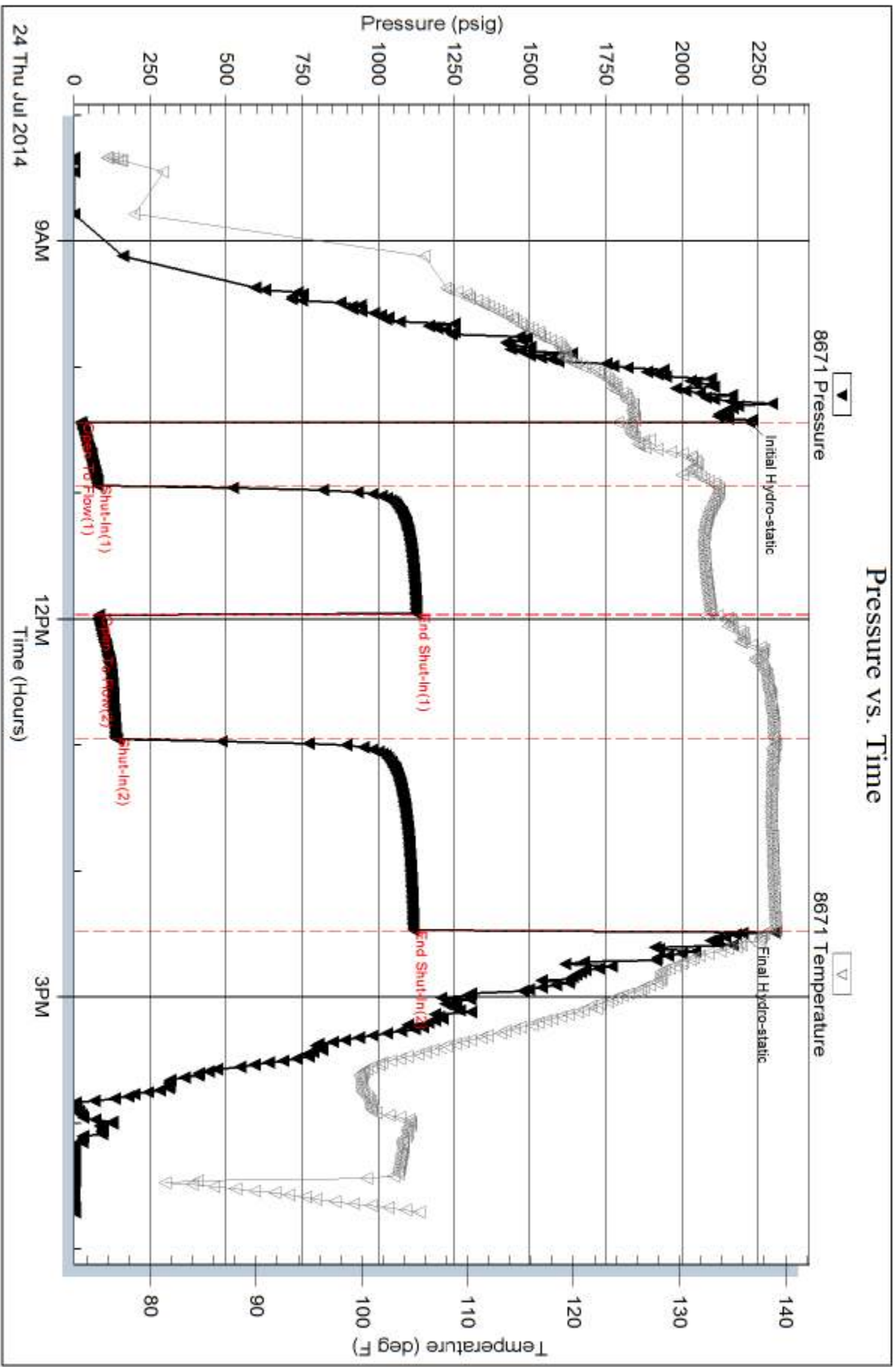
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .373 ohms @ 98.9 deg F

Chlorides = 12,000 ppm

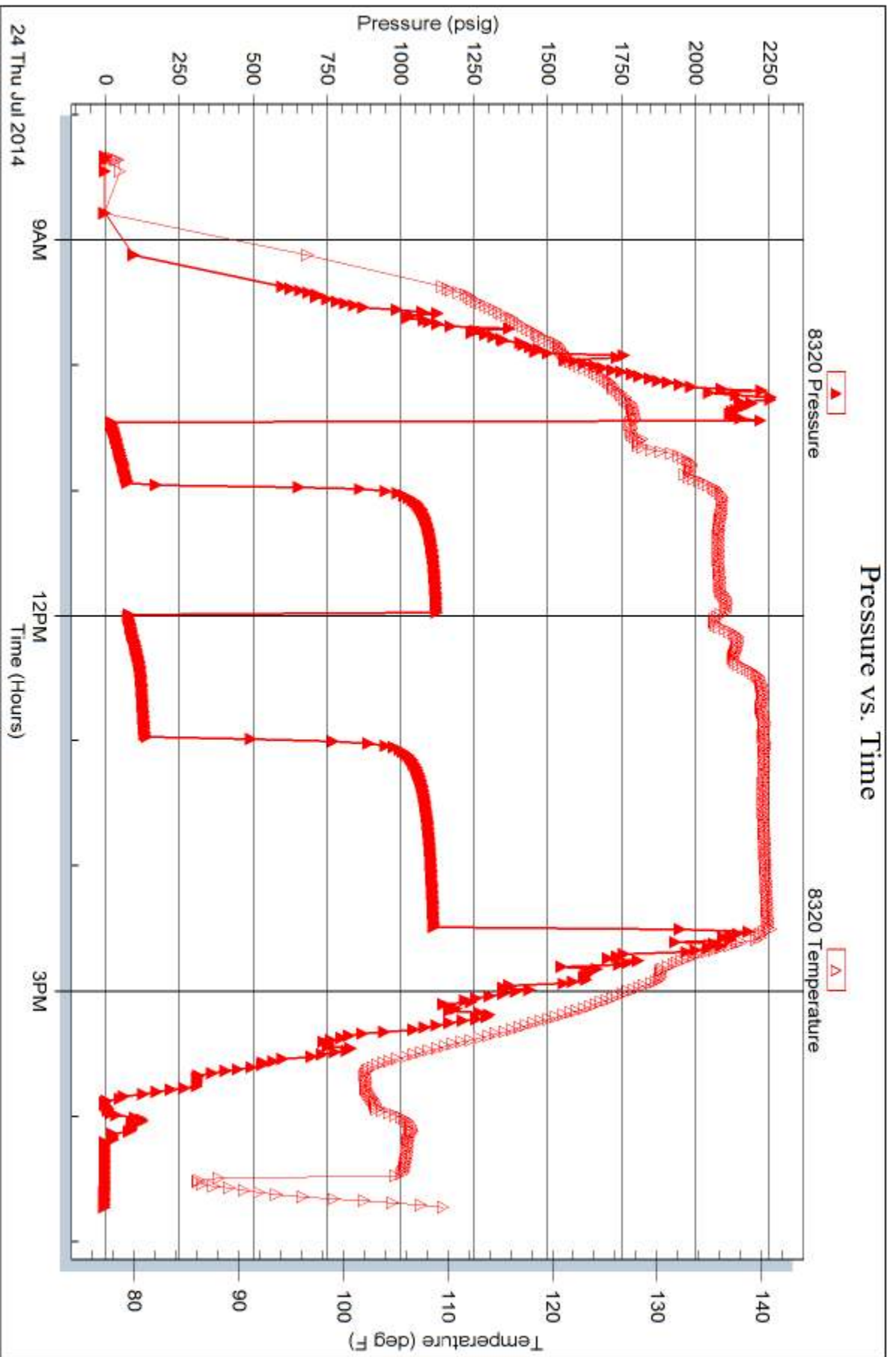


Serial #: 8320

Outside Murfin Drilling Co., Inc.

Virginia 'C' #1-14

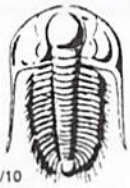
DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 56948

Printed: 2014.07.25 @ 08:22:52



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56947

Well Name & No. Virginia 'C' #1-14 Test No. 1 Date 7-23-14
 Company Murfin Drilling Co. Inc Elevation 3299 KB 3288 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig Murfin #2
 Location: Sec. 14 Twp. 1s Rge. 36w Co. Rawlins State KS

Interval Tested 4258 - 4370 Zone Tested LKC "D-G"
 Anchor Length 112 Drill Pipe Run 4000 4040 Mud Wt. 9.5
 Top Packer Depth 4253 Drill Collars Run 208 Vis 55
 Bottom Packer Depth 4258 Wt. Pipe Run - WL 8.4
 Total Depth 4370 Chlorides 600 ppm System LCM 10

Blow Description IF: Blow built to BOB (11") at 5 min.
ISI: No blowback
FF: Blow built to BOB at 9 min.
FSI: Blowback built to 1/2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>5MWC0</u>	<u>5</u>	<u>85</u>	<u>5</u>	<u>5</u>
<u>400</u>	<u>OCGWM</u>	<u>12</u>	<u>8</u>	<u>32</u>	<u>48</u>
<u>125</u>	<u>50/mcw</u>	<u>4</u>	<u>3</u>	<u>71</u>	<u>22</u>
<u>635</u>	<u>mcw w/trace oil</u>	<u>-</u>	<u>trace</u>	<u>91</u>	<u>9</u>
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1180 BHT 144 Gravity 23.8 API RW 463 @ 75.3 °F Chlorides 13,000 ppm

(A) Initial Hydrostatic 2190 Test 1250 T-On Location 10:45
 (B) First Initial Flow 66 Jars 250 T-Started 12:20
 (C) First Final Flow 329 Safety Joint 75 T-Open 14:34
 (D) Initial Shut-In 898 Circ Sub _____ T-Pulled 18:37
 (E) Second Initial Flow 330 Hourly Standby _____ T-Out 21:10
 (F) Second Final Flow 555 Mileage 108RT 167.40 Comments _____
 (G) Final Shut-In 885 Sampler _____
 (H) Final Hydrostatic 2102 Straddle _____ Ruined Shale Packer _____

Initial Open 30 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 60 Extra Packer _____ Extra Copies _____
 Final Flow 60 Extra Recorder _____ Sub Total 0
 Final Shut-In 90 Day Standby _____ Total 1742.40
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1742.40

Approved By [Signature] Our Representative James Winder

TriLOBITE Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56948

4/10

Well Name & No. Virginia 'C' #1-2014 Test No. 2 Date 7-24-14
 Company Murfin Drilling Co. Inc Elevation 3299 KB 3288 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig Murfin #2
 Location: Sec. 14 Twp. 15 Rge. 36W Co. Rawlins State KS

Interval Tested 4374-4460 Zone Tested LKC "H-J"
 Anchor Length 86 Drill Pipe Run 4165 Mud Wt. 9.1
 Top Packer Depth 4369 Drill Collars Run ~~248~~ 208 Vis 66
 Bottom Packer Depth 4374 Wt. Pipe Run - WL 7.2
 Total Depth 4460 Chlorides 800 ppm System LCM 12

Blow Description IF: Blow built to 3 1/2"
ISI: No blowback
FF: Blow started at 9 1/2 min., built to 5"
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>12</u>	<u>50cm</u>	<u>-</u>	<u>2</u>	<u>-</u>	<u>98</u>
<u>119</u>	<u>mud w/trace of oil</u>	<u>%gas trace</u>	<u>%oil -</u>	<u>%water 100</u>	<u>%mud</u>
<u>119</u>	<u>WM w/trace of oil</u>	<u>%gas trace</u>	<u>%oil 44</u>	<u>%water 56</u>	<u>%mud</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 250 BHT 139 Gravity _____ API RW .373 @ 98.9° F Chlorides 12,000 ppm

(A) Initial Hydrostatic 2221 Test 1250 T-On Location 8:00
 (B) First Initial Flow 22 Jars 250 T-Started 8:20
 (C) First Final Flow 79 Safety Joint 75 T-Open 10:26
 (D) Initial Shut-In 1125 Circ Sub _____ T-Pulled 14:28
 (E) Second Initial Flow 83 Hourly Standby _____ T-Out 16:35
 (F) Second Final Flow 138 Mileage 108 RT 167.40 Comments _____
 (G) Final Shut-In 1115 Sampler _____
 (H) Final Hydrostatic 2198 Straddle _____
 Shale Packer _____
 Ruined Shale Packer _____
 Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 60 Extra Recorder _____ Sub Total 0
 Final Flow 60 Day Standby _____ Total 1742.40
 Final Shut-In 90 Accessibility _____ MP/DST Disc't _____
 Sub Total 1742.40

Approved By _____ Our Representative Jane Winder

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.