



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N. Water STE 300  
Wichita KS 67206

ATTN: Saman ShariFaie

### **Burk Trust D #1-SWD**

### **23-1s-36w Rawlins,KS**

Start Date: 2014.06.10 @ 07:59:00

End Date: 2014.06.10 @ 15:34:09

Job Ticket #: 58255                      DST #: 1

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

Printed: 2014.06.13 @ 14:15:30



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company

**23-1s-36w Rawlins,KS**

250 N. Water STE 300  
Wichita KS 67206

**Burk Trust D #1-SWD**

Job Ticket: 58255

**DST#: 1**

ATTN: Saman ShariFaie

Test Start: 2014.06.10 @ 07:59:00

## GENERAL INFORMATION:

Formation: **LKC " B - D "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:22:20

Time Test Ended: 15:34:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 58

**Interval: 4174.00 ft (KB) To 4240.00 ft (KB) (TVD)**

Reference Elevations: 3221.00 ft (KB)

Total Depth: 4240.00 ft (KB) (TVD)

3210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

**Serial #: 6752**

**Inside**

Press@RunDepth: 113.94 psig @ 4175.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.10

End Date: 2014.06.10

Last Calib.: 2014.06.10

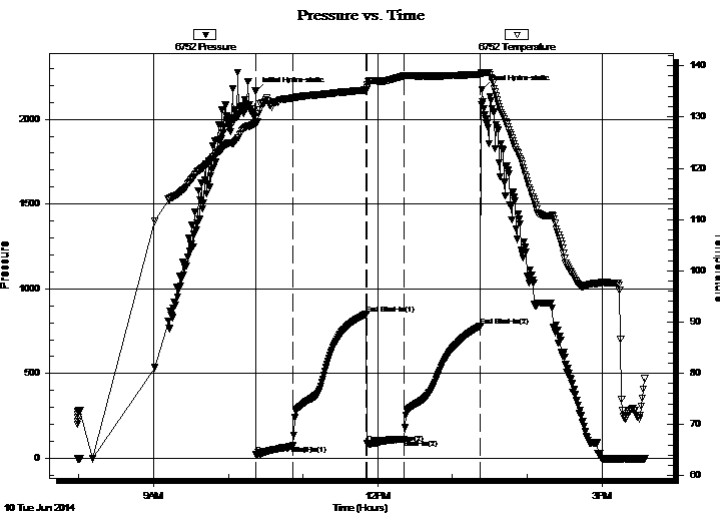
Start Time: 07:59:01

End Time: 15:34:10

Time On Btm: 2014.06.10 @ 10:21:50

Time Off Btm: 2014.06.10 @ 13:23:30

**TEST COMMENT:** 30 IF - 1/4" blow built to 5"  
60 ISI - No return  
30 FF - Surface blow started @ 5 mins built to 2 1/2"  
60 FSI - No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2162.60	128.81	Initial Hydro-static
1	23.66	128.77	Open To Flow (1)
30	76.02	133.71	Shut-In(1)
89	851.83	135.27	End Shut-In(1)
90	86.02	135.64	Open To Flow (2)
120	113.94	138.02	Shut-In(2)
181	780.09	138.32	End Shut-In(2)
182	2175.05	138.59	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCMW - 5%o - 10%M - 85%W	0.30
120.00	OCMW - 5%o - 20%M - 75%W	0.59
20.00	OWCM - 10%o - 40%W - 50%M	0.10

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company

**23-1s-36w Rawlins,KS**

250 N. Water STE 300  
Wichita KS 67206

**Burk Trust D #1-SWD**

Job Ticket: 58255

**DST#: 1**

ATTN: Saman ShariFaie

Test Start: 2014.06.10 @ 07:59:00

## Tool Information

Drill Pipe:	Length: 3975.00 ft	Diameter: 3.80 inches	Volume: 55.76 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: 203.00 ft	Diameter: 2.25 inches	Volume: 1.00 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 56.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 74000.00 lb
Depth to Top Packer:	4174.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	66.00 ft			
Tool Length:	93.00 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			4148.00	
Shut In Tool	5.00			4153.00	
Hydraulic tool	5.00			4158.00	
Jars	5.00			4163.00	
Safety Joint	2.00			4165.00	
Packer	5.00			4170.00	27.00 Bottom Of Top Packer
Packer	4.00			4174.00	
Stubb	1.00			4175.00	
Recorder	0.00	6752	Inside	4175.00	
Recorder	0.00	8322	Outside	4175.00	
Perforations	28.00			4203.00	
Change Over Sub	1.00			4204.00	
Drill Pipe	32.00			4236.00	
Change Over Sub	1.00			4237.00	
Bullnose	3.00			4240.00	66.00 Bottom Packers & Anchor

**Total Tool Length: 93.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company

**23-1s-36w Rawlins,KS**

250 N. Water STE 300  
Wichita KS 67206

**Burk Trust D #1-SWD**

Job Ticket: 58255

**DST#: 1**

ATTN: Saman ShariFaie

Test Start: 2014.06.10 @ 07:59:00

### 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: 55.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.39 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbf
60.00	OCMW - 5%o - 10%M - 85%W	0.295
120.00	OCMW - 5%o - 20%M - 75%W	0.590
20.00	OWCM - 10%o - 40%W - 50%M	0.098

Total Length: 200.00 ft      Total Volume: 0.983 bbf

Num Fluid Samples: 0

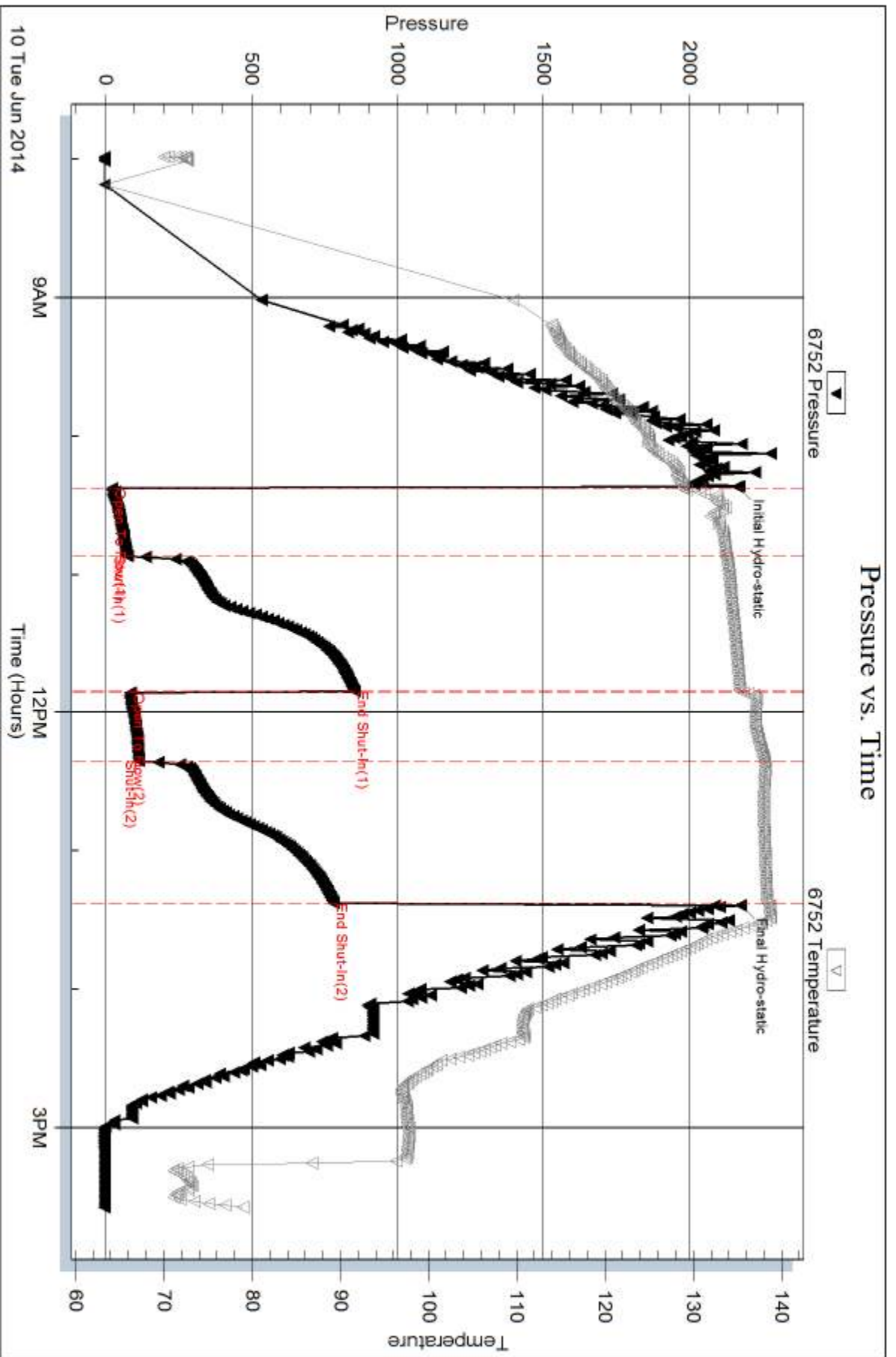
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

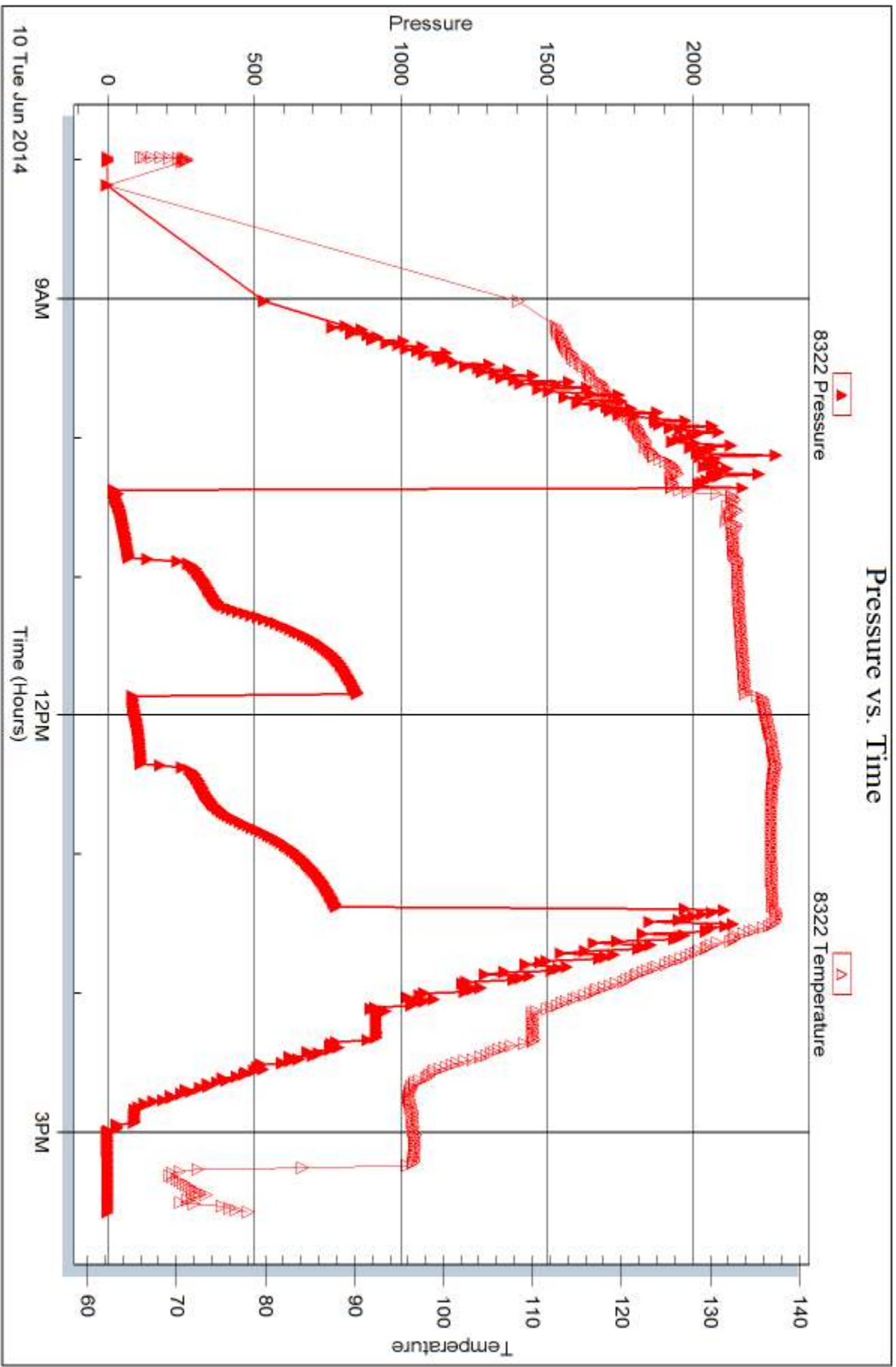


Serial #: 8322

Outside Murfin Drilling Company

Burk Trust D#1-SWD

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 58255

Printed: 2014.06.13 @ 14:15:31



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N. Water STE 300  
Wichita KS 67206

ATTN: Saman ShariFaie

**Burk Trust D #1-SWD**

**23-1s-36w Rawlins,KS**

Start Date: 2014.06.11 @ 00:33:00

End Date: 2014.06.11 @ 07:43:30

Job Ticket #: 58256                      DST #: 2

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

Printed: 2014.06.13 @ 14:14:33

Murfin Drilling Company

23-1s-36w Rawlins,KS

Burk Trust D #1-SWD

DST # 2

LKC " G "

2014.06.11





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company

**23-1s-36w Rawlins,KS**

250 N. Water STE 300  
Wichita KS 67206

**Burk Trust D #1-SWD**

Job Ticket: 58256

**DST#: 2**

ATTN: Saman ShariFaie

Test Start: 2014.06.11 @ 00:33:00

## GENERAL INFORMATION:

Formation: **LKC " G "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:30:50

Time Test Ended: 07:43:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 58

**Interval: 4242.00 ft (KB) To 4290.00 ft (KB) (TVD)**

Reference Elevations: 3221.00 ft (KB)

Total Depth: 4290.00 ft (KB) (TVD)

3210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

**Serial #: 6752**

**Inside**

Press@RunDepth: 37.24 psig @ 4243.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.06.11

End Date:

2014.06.11

Last Calib.:

2014.06.11

Start Time: 00:33:01

End Time:

07:43:30

Time On Btm:

2014.06.11 @ 02:30:20

Time Off Btm:

2014.06.11 @ 05:31:50

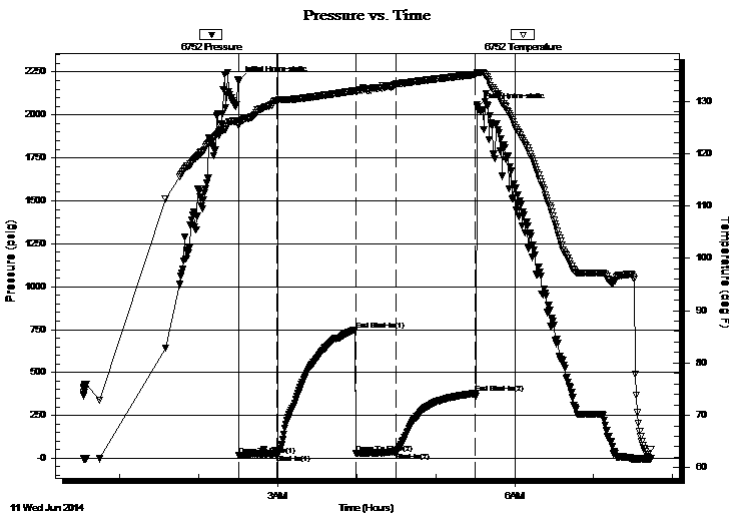
TEST COMMENT: 30 IF - Surface blow died @ 10 mins

60 ISI - No return

30 FF - No blow

60 FSI - No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2197.64	125.76	Initial Hydro-static
1	16.74	125.63	Open To Flow (1)
29	25.30	130.08	Shut-In(1)
89	749.19	132.00	End Shut-In(1)
90	27.45	131.87	Open To Flow (2)
120	37.24	133.26	Shut-In(2)
180	378.02	135.08	End Shut-In(2)
182	2045.31	135.48	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud w/oil spots 100%M	0.07

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
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# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company

**23-1s-36w Rawlins,KS**

250 N. Water STE 300  
Wichita KS 67206

**Burk Trust D #1-SWD**

Job Ticket: 58256

**DST#: 2**

ATTN: Saman ShariFaie

Test Start: 2014.06.11 @ 00:33:00

## 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: 203.00 ft	Diameter: 2.25 inches	Volume: 1.00 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 57.67 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	78000.00 lb
Depth to Top Packer:	4242.00 ft			Final	78000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	48.00 ft				
Tool Length:	75.00 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			4216.00	
Shut In Tool	5.00			4221.00	
Hydraulic tool	5.00			4226.00	
Jars	5.00			4231.00	
Safety Joint	2.00			4233.00	
Packer	5.00			4238.00	27.00 Bottom Of Top Packer
Packer	4.00			4242.00	
Stubb	1.00			4243.00	
Recorder	0.00	6752	Inside	4243.00	
Recorder	0.00	8322	Outside	4243.00	
Perforations	10.00			4253.00	
Change Over Sub	1.00			4254.00	
Drill Pipe	32.00			4286.00	
Change Over Sub	1.00			4287.00	
Bullnose	3.00			4290.00	48.00 Bottom Packers & Anchor

**Total Tool Length: 75.00**



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**FLUID SUMMARY**

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**23-1s-36w Rawlins,KS**

250 N. Water STE 300  
Wichita KS 67206

**Burk Trust D #1-SWD**

Job Ticket: 58256

**DST#: 2**

ATTN: Saman ShariFaie

Test Start: 2014.06.11 @ 00:33:00

## 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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud w /oil spots 100%M	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

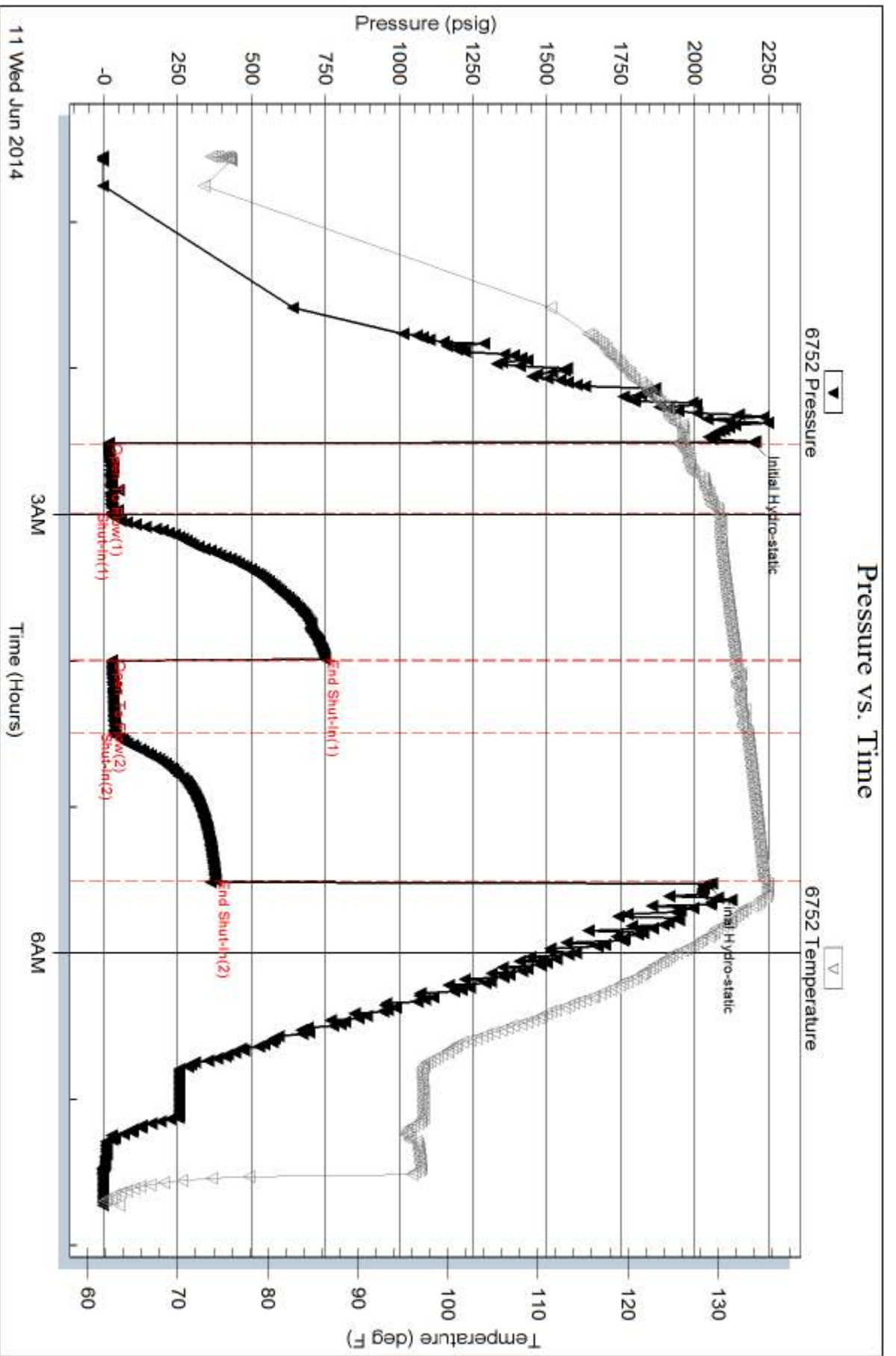
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

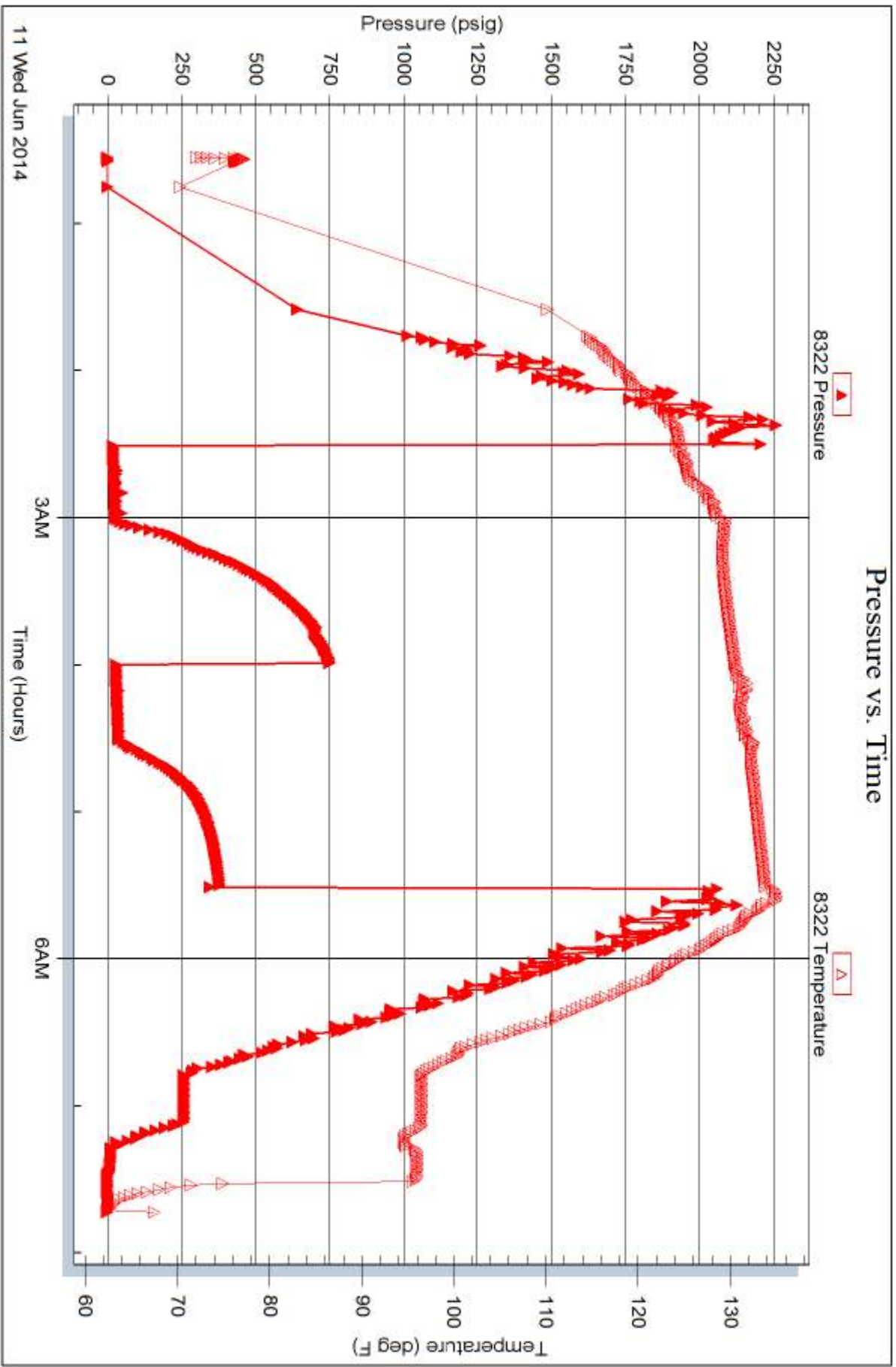


Serial #: 8322

Outside Murfin Drilling Company

Burk Trust D#1-SWD

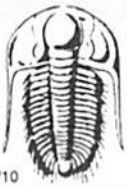
DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 58256

Printed: 2014.06.13 @ 14:14:34



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **58255**

Well Name & No. ~~10000~~ Burk Trust "D" #1-5WD Test No. 1 Date 8/10/14  
 Company Murfin Drilling Co. Elevation 3221 KB 3210 GL  
 Address 250 N. Water STE 300 Wichita KS ~~67206~~ 67206  
 Co. Rep / Geo. Samah ShariFaiz Rig Murfin # 2  
 Location: Sec. 23 Twp. 15 Rge. 36 W Co. Kawling State KS

Interval Tested 4174 - 4240 Zone Tested 2KC "B-D"  
 Anchor Length 66' Drill Pipe Run 3975' Mud Wt. 9.3  
 Top Packer Depth 4169 Drill Collars Run 203' Vis 55  
 Bottom Packer Depth 4174 Wt. Pipe Run 0' WL 6.4  
 Total Depth 4240 Chlorides 200 ppm System LCM 14  
 Blow Description IF - 1/4" blow built to 5"  
ISI - No return  
FF - Surface blow started @ 5 mins built to 2 1/2"  
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>20'</u>	<u>OWCM</u>	<u>10</u>	<u>40</u>	<u>50</u>	
<u>120'</u>	<u>OMCW</u>	<u>5</u>	<u>75</u>	<u>20</u>	
<u><del>60'</del></u>	<u>OMCW</u>	<u>5</u>	<u>85</u>	<u>10</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 200' BHT 1380 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2163</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>05:00</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u><del>07:59</del></u>
(C) First Final Flow <u>76</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>10:21</u>
(D) Initial Shut-In <u>852</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>13:21</u>
(E) Second Initial Flow <u>86</u>	<input type="checkbox"/> Hourly Standby	T-Out <u><del>15:34</del></u>
(F) Second Final Flow <u>114</u>	<input checked="" type="checkbox"/> Mileage <u>122 RT</u> 189.10	Comments
(G) Final Shut-In <u>780</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2175</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>1764.10</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1764.10</u>	

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. 58256

Well Name & No. Burk Trust "D" #1-5 WD Test No. 2 Date 6/11/14  
 Company Murfin Drilling Co. Elevation 3221 KB 3210 GL  
 Address 250 N. Water STE 300 Wichita KS 67206  
 Co. Rep / Geo. Saman ShariFaie Rig Murfin #2  
 Location: Sec. 23 Twp. 15 Rge. 36W Co. Rawlins State KS

Interval Tested 4242-4290 Zone Tested LKC "G"  
 Anchor Length 48' Drill Pipe Run 4040' Mud Wt. 9.3  
 Top Packer Depth 4237 Drill Collars Run 203' Vis 55  
 Bottom Packer Depth 4242 Wt. Pipe Run 0' WL 6.4  
 Total Depth 4290 Chlorides 600 ppm System LCM 14

Blow Description IF - Surface blow died @ 10 mins  
ISI - No return  
FF - No blow  
FSI - No return

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

Rec Total 15' BHT 135° Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2198  Test 1250 T-On Location 00:00  
 (B) First Initial Flow 17  Jars 250 T-Started 00:33  
 (C) First Final Flow 25  Safety Joint 75 T-Open 02:30  
 (D) Initial Shut-In 749  Circ Sub NC T-Pulled 05:30  
 (E) Second Initial Flow 27  Hourly Standby \_\_\_\_\_ T-Out 07:43  
 (F) Second Final Flow 37  Mileage 122 RT 378.20 Comments landed tools  
 (G) Final Shut-In 378  Sampler \_\_\_\_\_ @ 11:00 on 6/12/14  
 (H) Final Hydrostatic 2045  Straddle \_\_\_\_\_

Initial Open 30  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Copies \_\_\_\_\_  
 Final Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 800  
 Day Standby 1d 3.25h Total 2753.20  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1953.20

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.